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A revision of *Phyciodes* Hübner and related genera, with a review of the classification of the Melitaeinae (Lepidoptera: Nymphalidae)

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Contents

Synopsis	78
Introduction	78
Historical review	78
Abbreviations of depositories	79
Type-material and the British Museum (Natural History) collections	79
Phyciodine genitalia and the identification keys	80
Examination of Phyciodine genitalia	80
Taxonomy	81
Phyciodini trib. n.	81
Tribal characters	81
Distribution	82
Wing patterns	83
Key to genera of Phyciodini	84
<i>Phyciodes</i> Hübner	85
<i>Phystis</i> gen. n.	93
<i>Anthanassa</i> Scudder	94
<i>Dagon</i> gen. n.	108
<i>Telenassa</i> gen. n.	110
<i>Ortilia</i> gen. n.	115
<i>Tisona</i> gen. n.	120
<i>Tegosa</i> gen. n.	121
<i>Eresia</i> Boisduval	129
<i>Castilia</i> gen. n.	151
<i>Janatella</i> gen. n.	157
<i>Mazia</i> gen. n.	159
Species incertae sedis	160
Supplement on certain genera of Melitaeini	160
<i>Gnathotriche</i> Felder & Felder	160
<i>Gnathotrusia</i> gen. n.	162
<i>Higginsius</i> Hemming	163
<i>Antillea</i> Higgins	164
Review of the classification of the Melitaeinae	164
Check-list of tribes, generic groups, genera and species of the Melitaeinae	165
Distribution	171
Palearctic region	171
Nearctic and Neotropical regions	173
Acknowledgements	174
References	175
Index	238

Synopsis

The new tribe Phyciodini is defined and its constituent taxa revised at the generic and specific levels, thus completing an account of the nymphalid subfamily Melitaeinae commenced by the author over 40 years ago. An historical account of the taxonomy of the group is included, together with information on type-material, and the taxonomic and practical methods employed. The geographical distribution and wing patterns of the 137 included species are discussed. A key to the twelve genera is provided and a key to species is given for each genus in turn. The account of each species includes a full synonymy of nominal species and forms, and a brief morphological description and a summary of distribution. A supplementary section deals with four divergent genera of American Melitaeini previously often confused with the Phyciodini. Finally, an overview of the author's conclusions concerning the classification of the Melitaeinae is given, including a complete check-list of the tribes, generic groups and species of the subfamily. The taxonomic work results in the description of ten new genera, five new species, and three new subspecies; 135 changes in combination, one new generic synonym, 35 new specific synonyms, and 38 changes of specific status are established; three species are raised from synonymy; one new specific name is proposed; and 106 lectotypes are designated.

Introduction

This account of the Phyciodini has two main objectives. The first one is to examine the characters of this large tribal group of over 130 species, and to analyse the relationships of the various subgroups of generic status which are defined and named. The second objective, dependent upon the first, needs explanation. I have had a special interest in the Melitaeinae for a great many years, and reviews of the Palaearctic species, and of the American *Chlosyne* and their allies, have already appeared (Higgins, 1941; 1950; 1955; 1960). The present review of the Phyciodini, and the accompanying account of the small Melitaeine genera related to *Gnathotriche* Felder & Felder, will complete the analysis, by a single worker, of the entire subfamily, including about 240 species. Apart from a consistent taxonomic treatment, the comprehensive account could reveal interesting features which may be overlooked when the series is considered, as is usual, as consisting of independent Eurasiatic and American groups.

Historical review

The history of the Phyciodini goes back to 1819, when Hübner introduced the generic name *Phyciodes* for two American species, *cocyta* Cramer and *liriope* Cramer, united generically by the rather unimpressive character of 'reticulate markings' on the undersides of the hindwings. The new genus was placed by the author in his group of Dryads, a creditable decision at that early date. Seventeen years later Boisduval (1836) published the name *Eresia eunica* (recte *eunice*) by means of a figure only, erecting a new genus without any description or definition. Soon afterwards, as interest increased in the butterflies of Central and South America, many new species were described by various authors including the Felders, Bates, Hewitson, Druce and, later, Godman & Salvin, using the generic names *Melitaea*, *Eresia*, *Phyciodes* etc. according to personal preference—since the characters of these genera were not defined.

In fact, definition was not possible, at this date, since characters used in the nineteenth, and in the early years of the present, century were not adequate for the taxonomic analysis of these butterflies. Nevertheless, in 1875 Scudder proposed the genus *Anthanassa*, with somewhat equivocal characters and a type-species of uncertain identity, evidence that the complex nature of the tribe was becoming recognised. Seven years later, in 1882, Godman & Salvin made a distinction between *Eresia* and *Phyciodes*, and separated these from the American *Chlosyne* (Melitaeini) and their allies, partly on the characters of their genitalia. This useful hint was not followed up by later authors. Schatz (1892), in his article on the Melitaeinae, separated *Melitaea* from *Phyciodes*, with a note that it was customary to do so, but that there was not any good distinctive character.

Schatz's careful review provided the basis for Röber's long article on *Phyciodes* in Seitz (1913–1914). A similar system was adopted by the late Arthur Hall in his 'Revision of the genus *Phyciodes*' (1928–1930).

In his account Hall recognised only the genus *Phyciodes*, to include not only *Eresia* and *Anthanassa*, but also numerous American species of Melitaeini such as *harrisii* Scudder and its allies, already distinguished and very properly removed from *Phyciodes* by Godman & Salvin, Staudinger, Schatz and others. In doing this, Hall made a serious taxonomic mistake, but in other respects his work was a most important contribution. He had the advantage of knowing many species in the field, and had easy access to the extensive collections of Rothschild and of Joicey, and to the collection in the British Museum (Natural History), all containing much original type-material. With excellent library facilities he succeeded in establishing the complicated synonymies of most species and also assembled the confusing polymorphic and mimetic phenotypes in an outstanding study which has made his work essential to all later students. There are occasional references to relationships disclosed by examination of the male genitalia, but by modern standards this part of his work is not helpful. Revision of Hall's work was clearly necessary. This was undertaken by W. T. M. Forbes (1945), who made free use of the genitalia in an improved taxonomic arrangement on modern lines. In this review the North American species allied to *palla* are placed in *Melitaea*, and the Felders' genus *Gnathotriche* is retained, while the remaining species are all included in *Phyciodes*, used in a tribal sense, and divided into 13 groups with three named subgenera. This paper marks an important advance in the study of the group, but still fails to provide a generic definition for *Phyciodes*. Forbes contented himself with the remark '... the boundary against *Melitaea* is universally agreed to be indefinite, one might almost say non-existent, if we consider only superficial characters'. Certainly this extensive group does present difficulties. Natural affinities are so often obscured by mimetic resemblances to unrelated, naturally protected species. In the present paper the species retained by Forbes in *Phyciodes* have been allocated to 12 genera, based principally upon the characters of the male genitalia.

Abbreviations of depositories

AMNH, New York	American Museum of Natural History, New York
BM, Brighton	Booth Museum, Brighton
BMNH	British Museum (Natural History), London
CAS, San Francisco	California Academy of Sciences, San Francisco
CM, Pittsburgh	Carnegie Museum, Pittsburgh
CNC, Ottawa	Canadian National Collection, Ottawa
FMNH, Chicago	Field Museum of Natural History, Chicago
IML, Tucumán	Instituto Miguel Lillo, Tucumán
MACN, Beunos Aires	Museo Argentino Ciencias Naturales, Buenos Aires
MN, Rio de Janeiro	Museu Nacional, Rio de Janeiro
MNHN, Paris	Muséum National d'Histoire Naturelle, Paris
MNHU, Berlin	Museum für Naturkunde der Humboldt-Universität, Berlin
NM, Vienna	Naturhistorisches Museum, Vienna
NR, Stockholm	Naturhistoriska Riksmuseet, Stockholm
RSM, Edinburgh	Royal Scottish Museum, Edinburgh
UM, Oxford	University Museum, Oxford
USNM, Washington	National Museum of Natural History, Washington, D.C.
ZI, Leningrad	Zoological Institute, Leningrad

Type-material and the British Museum (Natural History) collections

I have never been in Central or South America, and this review is based on the material in the BMNH, most of which was assembled between the middle and the end of the last century. This huge collection includes not only the entirety of the Rothschild Collection, but much other material from Bates, Hewitson, Godman & Salvin, Oberthür and Joicey. The Rothschild Collection itself included much material from the Felders, and from Röber. Finally, the BMNH collection includes many specimens collected by Arthur Hall, who was the last person to re-arrange the BMNH Phyciodini, although Hall's private collection (together with his voluminous manuscript notes) passed to the BM, Brighton, Sussex (where I have examined it).

Thus the BMNH collection includes type-material covering over 75 per cent. of the phyciodine species recognised at present (including approximately 50 per cent of nominal species). With this, and much of the other material, the provenance from individual collections is almost always recorded, sometimes the names of the actual collectors, and often the year of collection, although very few specimens are accurately dated. As always with material of this vintage, even the actual locality data are often vague, totally wanting, or even downright misleading; however, most of the false data labels are now tolerably well known, and their 'information' can be discarded or re-interpreted.

In their descriptions the early authors sometimes referred to 'types', but the actual specimens were rarely so-labelled. Throughout this treatment, original specimens have been regarded as holotypes only where there is clear evidence or a statement in the original description as to their unique status. In all other cases, where original material has been positively identified and examined, lectotypes have been designated, in accordance with the suggestions put forward by Vane-Wright (1975: 26-28). Where original material has not been traced or examined, information has been included, as far as is available from the original description, as to the number, sex and status of primary type-specimens, and their provenance and present depository, where known. With respect to the BMNH types in particular, a great many were previously listed in A. G. Gabriel's excellent catalogue, published in 1927; wherever possible the present type designations have been cross-referenced to Gabriel's catalogue and type-specimen numbers.

Phyciodine genitalia and the identification keys

In making this study it has been necessary to examine the genitalia of every available species, and these are now illustrated, with other anatomical characters, in a series of some 313 figures, taken from camera lucida drawings made by myself. The original preparations naturally vary greatly in size, and it has not been possible to make the drawings really uniform in this respect. In all cases size is indicated by a 1 mm scale line. Keys to genera and species have been included. Unfortunately external characters are often misleading at the generic level, so the key to genera is based largely upon genitalic characters. I have not been able to devise for the species of the whole tribe a single workable key based upon wing markings, size and similar external features. Keys to the species of each genus are provided, however, based upon external characters as far as possible, but such keys are only usable after a specimen has been correctly placed generically. This is easy if the male genitalia are examined. Distinction between closely similar species may be difficult and the keys will be useful in making the final identification, with the help of the photographic plates.

Examination of Phyciodine genitalia

Preparation of the male genitalia of the Phyciodini needs special care. The organs are usually very small, fragile, and unsuitable for dissection. Every care must be taken to avoid distortion, and the genitalia should be mounted in a shallow cell, free from pressure, in a position which will give a view of the parts at exactly the same angle in all cases, in order to allow comparison between different preparations. Owing to the oval shape of the valves, the only position in which the organs are stable is erect, the dorsal structures upwards, resting on the saccus and the lower borders of the valves. This position gives a good view of all taxonomically important parts. The penis should be extracted and mounted to give a lateral (side) view. There is a difficulty here when a single specimen only is available, as it is easy to damage the dorsal structures when the penis is removed. Any distortion will destroy the symmetry of the organs and mounting in the correct position will be difficult. The penis shape in most species is flattened antero-posteriorly, and manipulation will be required to secure a lateral view in a permanent preparation. It is often best to leave the penis in position until immediately before mounting, as it is easily lost if it is removed at an early stage of preparation.

The elaborate sterigma of the female genitalia is displayed if the abdomen is opened along the dorsum and the lateral walls are spread flat on each side. When the parts are cleaned, care must be taken to leave the bursa in its correct position, lying along the ventral abdominal plates.

Prepared in this way and allowed to dry upon the slide for a day or so, the specimen can be taken off by undercutting with a thin knife when it will remain flat while it is dehydrated and cleared for mounting in the usual way. A few drops of alcohol will help to loosen the dried specimen before it is removed from the slide.

Taxonomy

The collections with which I have worked have covered the whole, vast area of tribal distribution, but representation is uneven. Often the material has been collected from a single locality, perhaps during a single visit, and so for many species it is not possible to define distributional frontiers. This leads to taxonomic difficulties as often there is little information about seasonal variation or possible distributional overlap or clinal series. In the absence of this information it is only by guessing that the status, local or individual form, seasonal modification or geographical subspecies, can be decided, when specimens with slightly differing phenotypical characters are reported flying in widely separated localities. In such cases, when the differing characters are constant and easily recognisable, the butterflies are treated here as distinct species, in order to emphasise their individuality. I have found it necessary to introduce 10 new genera and to describe eight new species or subspecies. A single familiar name has been found to be invalid. This is *Eresia 'clio'* of Aurivillius (1882) and of many later authors, which certainly is not the species named *Papilio clio* by Linnaeus, which is probably an Ithomiine, perhaps *Ithomia aegle* (F.) as figured in 'Seitz' (pl. 38, row f [Fig. 5]). I understand from Dr Holm, the Curator of the Linnaean (i.e. Queen Ulrica's) collection at Uppsala, that the single original specimen of '*clio* auct.' is there labelled *nauplius*, as it is in the figures in Clerck's *Icones*.

In the synonymy given for each species, I have indicated when I have examined the type-material of each nominal taxon by the annotation '[examined]'. Where type-material has not been examined, the assignment of any name must be regarded in some sense as tentative or provisional, as the examination of the genitalia is of critical importance in most species.

PHYCIODINI trib. n.

(Figs 178–185)

Type-genus: *Phyciodes* Hübner.

In the Melitaeinae, of which the Phyciodini form the largest section, the structure of the antennae, palpi, legs and the wing venation is almost uniform throughout the subfamily. It has not been generally recognised that almost all such characters are of subfamily value, but their uniformity has proved to be a serious difficulty in recognition of the tribal status of the Phyciodini and for their classification at generic levels. It is in the structure of the genitalia that characters below the subfamily level are well defined and the individuality of the Phyciodini is seen to isolate them from other melitaeine tribes. Careful examination of every available species (about 135) has failed to show any with intermediate or ambiguous tribal features.

Tribal characters

Small or medium-sized butterflies, forewing 11–30 mm (Fig. 178), cell closed by vestigial veins, v_{11} arises near cell-end except in a few genera (*Mazia*, p. 159; *Castilia*, p. 151) in which it arises at or beyond cell-end. Hindwing (Fig. 179) cell open, precostal vein well developed.

Palpi (Fig. 180) porrect or semi-ascending, terminal segment narrow, middle segment usually slightly dilated, clothed beneath with long or, in *Castilia*, very long hair.

Legs of usual nymphaline type, ♂ foreleg greatly atrophied (Fig. 181), tarsus often reduced to a single segment, tibiae of mid- and hindlegs with slender spines and a single pair of spurs.

Early stages. Characters of ovum, larva and pupa, when known, similar to those of *Melitaea*; larval spines in *Phyciodes* represented by little more than hairy tubercles (*P. tharos*).

Male genitalia (Figs 182–184). In all melitaeine butterflies the genitalic structure is unusual, especially in respect of the absence of an uncus and in the fusion of the saccus and juxta to

form a strongly chitinised basal plate (Higgins, 1941). In the Phyciodini the genitalia show little variation from this basic type. As discussed above, the organs are best examined entire, without any dissection of the valves, which may be confusing, since their lateral walls are rounded and the absence of a flat lateral surface to support the isolated organ at a constant angle prevents accurate comparison between different preparations. In most cases examination of a dorsal view of the intact organs is most valuable, showing the special features of tribal and generic value, as follows.

Tegumen (A) and scaphial extension (E) (Figs 182, 183). These dorsal structures, taken together, are almost always well developed, and form an important feature of the organs in *Eresia*, *Phyciodes*, *Tegosa* and *Janatella*. This is in contrast with the usual structure in the Melitaeini, in which the tegumen is commonly small or even vestigial. In the Phyciodini minor variations in shape and in the development of spinous areas provide generic characters of value. In many species the lateral walls of the scaphial extension (E) are more or less chitinised (Figs 182, 183), with the space between covered by a membranous curtain, which may extend as an inferior layer, sometimes partly chitinised, forming the floor of the anal compartment.

Saccus (S). This structure, fused with the juxta (J), is always well developed. It is often deeply cleft, as in the Melitaeini, but it is entire (lingulate) in the genera *Eresia*, *Janatella*, *Ortilia* and *Tegosa* (part), often with a small apical notch and associated with unusual development of the dorsal structures. Among the Melitaeini, a saccus of this type is found only in *Didymaeformia trivialis* and in *Melitaea lukto* in its various forms, the former usually considered a divergent relict species.

Valves (V). Throughout the entire tribe these are oval, elongate posteriorly, with relatively little variation. Near the apex the costal border often has small teeth which are enlarged in *Anthanassa* and in *Ortilia*, to give the appearance of a bifid apex (Fig. 225). In the genera *Telenassa* and *Castilia* the posterior sections of the valves have a characteristic form, giving a generic character. The harpe (H) is always well developed, the structure usually simple, occasionally with a few basal teeth on the underside (Fig. 268).

Penis (P) or aedeagus (Fig. 184). In all species this is straight or nearly so, with a well-defined morula (M). An ostium-keel (OK) is present in the genera *Eresia*, *Castilia*, *Janatella* and *Phyciodes* (part), not so prominent as it is in the melitaeine genus *Mellicta*, and in *Phyciodes* quite small, but large enough in most species to show distant relationship. The penis may be slender or stout, e.g. in *Telenassa* (Fig. 297) in which the organ is massive.

Female genitalia (Fig. 185). The structure of the sterigma is distinctive and often elaborate. The ostium bursae (O) opens between segments 7 and 8, usually at the bottom of a deep pit; the bursal duct (BD) is partly chitinized and surmounted by a structure that I have called the bursal support (BS), often egg-shaped, sometimes with three lateral projections or ribs (e.g. *Eresia coela*, Fig. 389), to which the bursa copulatrix (B) is attached. This structure, with the formation of the bursal support, is peculiar to the Phyciodini and forms an excellent tribal character. The genital plate extends across segment 8 as a modified area named the scutum (S).

Distribution

The Phyciodini are restricted to America, and widely distributed throughout the continent from about 55°N to 35°S. The species usually occur in localised colonies, and do not appear to have any tendency to migrate or to wander. Owing to lack of information and of material from large areas, especially in South America, it is not possible to be precise about distribution patterns of genera or species, but in general terms I think the following picture is reasonably accurate.

The genus *Phyciodes* alone is represented in Canada and in most of the United States, excepting the fringe areas in the south where some tropical species have penetrated. *Anthanassa*, which begins to appear in Mexico and in Arizona, is a large genus developed extensively in Central America, Colombia and Venezuela, with single divergent species in the east in Argentina and Brazil (*hermas*) and in Jamaica and Cuba (*frisias*). Further south in S. Peru, Bolivia and in S.W. Argentina, there is *Dagon*, with three (or four?) rather isolated and small, rare species, all closely related. The genus *Telenassa*, with about 16 species, occurs in the mountainous

western regions of Peru, Colombia and Ecuador. The saccus is deeply cleft in all species. In eastern South America its place is taken by *Ortilia*, with 10 species, widely distributed in C. and S. Brazil, Paraguay, and Argentina, but overlapping the *Telenassa* area in Peru and Bolivia. All species have a single (entire) saccus, and this genus is accompanied over much of the region by *Phystis*, a monotypic genus, the single small and variable species recalling *Phyciodes* in certain respects. The largest genus, *Eresia*, with about 35 species, includes many mimetic and polymorphic forms. Although especially characteristic of Central America, it extends throughout the area south of the United States, with endemic species in the Guyanas and in NE. Brazil (Amazon). A large genus, *Tegosa*, including many small species with orange-yellow wings with dark borders, is widely distributed in Central and South America, and includes several small and localised species endemic in Ecuador and Peru. Probably closely related is *Tisona*, endemic in the Chaco district of Argentina and in Bolivia. The male genitalia of the single species have several unusual features (Figs 321–323). The genus *Castilia* includes about 12 species, of which four are mimetic of *Actinote*, occurring over a wide area in tropical Central America, Colombia and Guatemala. In three of these species the venation of the forewing is atypical. The external features of the remaining species are variable, but good generic characters are provided by the genitalia. Another small group is *Janatella* with three species occurring from Ecuador and Central America to the Guyanas, probably related most closely to *Eresia*. Finally, in *Mazia*, the third monotypic genus, the single species *amazonica* is divergent in wing markings, wing venation and in the characters of the genitalia, and although undoubtedly a member of the Phyciodini, it is difficult to suggest any near relative. The species appears to be widely distributed over the vast drainage system of the Amazon. In hindsight, the astonishing concentration of species in Central America, Venezuela and Colombia, is most striking, yet only one species, *Anthanassa frisia*, has become established in Cuba and in a few other islands, to represent the Phyciodini in the Greater Antilles. *Phyciodes phaon*, which occurs in the Cayman Islands and probably in Cuba, is an outlier from North America where all its relationships lie. It appears as an alien among the true fauna of Mexico and Central America.

Wing patterns

On the upperside of the Melitaeinae there is a remarkably constant basic or standard pattern, with black striae and/or spots in series upon a buff coloured or orange-red ground-colour, present and immediately recognisable in all Palaearctic and Nearctic species, with the exception of two euphydryad butterflies, *phaeton* (both sexes) and *cynthia* (♂ only). On the underside of the hindwing the arrangement of reddish spots in basal and submarginal series is even more constant and characteristic. This scheme of markings, which appears in all species distributed over the areas of Quarternary glaciation, must be recognised as an important character of the subfamily Melitaeinae. In the tribe Phyciodini, the standard markings are present in the species of the genus *Phyciodes*, which inhabit principally the temperate northern regions of America, but in Mexico and further south to Argentina, Bolivia and Peru, the standard markings do not appear, but are altered in all species by mimicry (*Chlosyne*) or they become variable (Phyciodini), sometimes with mimicry, but often with different arrangements characteristic of different genera (e.g. *Tegosa*, *Ortilia*, *Anthanassa*, etc.).

Mimicry. In *Eresia* and *Castilia* many species are mimetic, and wing shapes and markings may be altered from the usual generic patterns. Heliconiine, ithomiine and acraeinae species are the most frequent models, including such genera as *Ceratinia* Hübner, *Napeogenes* Bates, *Ithomia* Hübner, *Eueides* Hübner and *Actinote* Hübner, all recognised distasteful groups. In *Eresia eutropia*, *E. pelonia* and *E. eunice*, polymorphism, especially among females, is so varied that it is impossible to find a satisfactory name for every form. In all such cases the mimicry appears to be of the classical Batesian type (pseudaposematic), and much information on this subject, based upon personal observation, is recorded by Hall (1928–1930). In addition there is a strong tendency towards mimicry, or to independent development of similar wing markings, between species in different genera among the Phyciodini, or even between phyciodine species and those of other unprotected groups. It is difficult to explain the value of repetitive wing markings (or mimicry?)

of this type, but it may be that the protection afforded by certain simple wing patterns is not understood. The following examples are especially striking.

Ortilia liriopae and *Tegosa claudina*, confused by everyone until separated by Forbes (1945) after genitalia examination.

Janatella leucodesma and *Dynamine* Hübner spp.

Telenassa abas and *Janatella fellula*. Wing markings almost identical but genitalia do not indicate close relationship.

Janatella hera and *Castilia ofella*. The similarity is remarkable. It seems unlikely that the two species ever fly together or even in the same regions.

Adams & Bernard (1979) have described some rather similar examples of puzzling convergence between unrelated but, in this case, definitely sympatric members of the Andean pronophiline satyrid fauna. One possible explanation involves the concept of arithmetic mimicry, as originally put forward by Van Someren & Jackson (1959), and discussed by Vane-Wright (1976: 37-38). Robson & Richards (1936: 260) refer to the earlier observations by Chapman (1913) and myself (Higgins, 1930) on conceivably similar phenomena among alpine species of *Erebia* Dalman in the Palaearctic region.

Key to genera of Phyciodini

- | | | |
|----|------------------------------------------------------------------------------------------------|-----------------------------|
| 1 | Antennal club slender, elongate (Fig. 491) | <i>MAZIA</i> (p. 159) |
| - | Antennal club larger, pyriform (Fig. 227) | 2 |
| 2 | Penis apex with crossing ostium-folds (Fig. 323) | <i>TISONA</i> (p. 120) |
| - | Penis apex not so formed | 3 |
| 3 | Scaphial extension of tegumen elongate, terminal angles armed with hooks or spines (Fig. 383) | 4 |
| - | Scaphial extension of tegumen small, terminal angles lacking hooks or spines | 7 |
| 4 | Upperside of forewing usually yellow, marginal borders and oblique subapical bar black | <i>*TEGOSA</i> (p. 121) |
| - | Upperside of forewing not so marked | 5 |
| 5 | Saccus deeply cleft | <i>PHYCIODES</i> (p. 85) |
| - | Saccus single | 6 |
| 6 | In dorsal view lateral angles of tegumen armed with 3 or 4 strong teeth (Fig. 471) | <i>JANATELLA</i> (p. 157) |
| - | In dorsal view lateral angles of tegumen appearing as rounded, spiculate bosses (Fig. 364) | <i>ERESIA</i> (p. 129) |
| 7 | Hindwing upperside submarginal band formed of 5 ocellar spots | <i>PHYSTIS</i> (p. 93) |
| - | Hindwing upperside submarginal band not so formed, or absent | 8 |
| 8 | Saccus single, more or less expanded to broadly notched apex (Fig. 270) | <i>DAGON</i> (p. 108) |
| - | Saccus not so formed | 9 |
| 9 | Saccus single, narrow or tapering to apex (Fig. 302) | <i>ORTILIA</i> (p. 115) |
| - | Saccus cleft | 10 |
| 10 | Posterior section of valve short, penis slender | <i>ANTHANASSA</i> (p. 94) |
| - | Posterior process of valve longer, penis massive | 11 |
| 11 | Posterior section of penis short, about one-third total length, ostium-keel lacking (Fig. 279) | <i>**TELENASSA</i> (p. 110) |
| - | Posterior section of penis about half total length, ostium-keel prominent (Fig. 465) | <i>CASTILIA</i> (p. 151) |

* In *Tegosa* the black marginal upperside borders may be extended into wide, dusky suffusions, e.g. *T. etia* (p. 127); *T. nigrella* (p. 128).

** The male genitalia show other distinctive characters but the features of the penis are sufficiently striking for the purposes of this key.

PHYCIODES Hübner

Phyciodes Hübner, [1819]: 29. Type-species: *Papilio cocyta* Cramer [= *Phyciodes tharos* (Drury)], by subsequent designation (Scudder, 1872: 46). Gender: masculine.

Small butterflies, forewing outer margin straight or slightly excavate; upperside orange-fulvous marked with black spots and stripes, recalling Palaearctic species of Melitaeini; hindwing underside a pale yellow or silvered marginal crescent usually present in s3. Sexes similar, mimetic forms absent.

Genitalia. ♂, in dorsal view, tegumen elongate, scaphial extension tapering slightly to a wide apex, terminating in one or more small hooks at each lateral angle, valve elongate, tapering gradually to an incurved, pointed apex, preceded by one or more small costal teeth; penis slender, almost straight, with small ostium-keel and morula. ♀ ductus chitinised, rather long, well defined, bursal support elongate (Fig. 192).

DISTRIBUTION. The species are widely distributed and often common in North America, especially in the western states of the U.S.A. Four small species, almost restricted to the southern states, range further south into Mexico and Guatemala. The little *P. phaon* has spread from Georgia to the Cayman Islands.

DISCUSSION. The species *tharos*, *batesii*, *campestris* and *montanus* all have similar markings, are sometimes difficult to identify, and specific characters in the male genitalia are poorly developed. In some specimens the scaphial hooks are bent over in a curious way, but without obvious fracture. It seems possible that the distortion happens during life when the tissues are elastic.

Key to species of *Phyciodes*

Note. It has not been practicable to include *P. herlani* (p. 90), *P. pallidus* (p. 89) and *P. orseis* (p. 90) in this key.

Most species are variable in size. Identification may be difficult, especially in *P. mylitta*, in which the black upperside markings may be expanded (rare). It has proved difficult to key out *P. montanus*, lightly marked but otherwise resembling *P. campestris*, and considered a high-level form of the latter by many authorities. Except for *P. vesta*, and perhaps for *P. mylitta* (including *herlani*, *pallidus* and *orseis*), the male genitalia are not really helpful in making identifications.

- | | | |
|---|--------------------------------------------------------------------------------------|----------------------------------------------------|
| 1 | Two or more hooks at each angle of scaphial extension (Fig. 217) | <i>vesta</i> (p. 92) |
| - | Single hook at each angle (Fig. 186) | 2 |
| 2 | Small species, ♂ forewing 11–14 mm, markings pale yellow, colour contrast brilliant* | 3 |
| - | Larger species, ♂ forewing 15–18 mm, colour contrast slight or absent | 4 |
| 3 | Forewing underside pale apical area unmarked | <i>pictus</i> (p. 90) |
| - | Forewing underside apical area with linear markings | <i>phaon</i> (p. 91) |
| 4 | Hindwing underside outer margin with dark shade in s2–s5 | <i>tharos</i> (p. 85) |
| - | Hindwing underside marginal shade slight or absent | 5 |
| 5 | Forewing upperside base dusky, yellow mark near apex of cell prominent | 6 |
| - | Forewing upperside base rarely dusky, yellow mark near apex of cell not prominent | <i>mylittus</i> (p. 88) |
| 6 | Forewing underside black costal and discal markings heavy | <i>batesii</i> (p. 86) |
| - | Forewing underside black costal and discal markings usually vestigial or absent | <i>montanus</i> (p. 88), <i>campestris</i> (p. 87) |

***Phyciodes tharos* (Drury)**

(Figs 1, 178–182, 186–192)

Papilio tharos Drury, [1773]: index to vol. 1; [1770]: 43, pl. 21, figs 5, 6. Syntype(s), U.S.A.: New York (depository unknown) [not examined].

Papilio morpheus Fabricius, 1775: 530. Syntype(s), NORTH AMERICA ('in America boreali') (presumed lost; not listed by Zimsen, 1964).

Papilio cocyta Cramer, [1777]: 7, pl. 101, figs A, B. ♂ syntype(s), [NORTH AMERICA] ('Surinam') (presumed lost).

Papilio euclea Bergsträsser, 1780: 23, [pl. 79, figs 1, 2]. Holotype (sex?) [NORTH AMERICA] ('England') (*d'Orcy*) (depository unknown, presumed lost) [not examined].

* In specimens of *P. phaon*, spring brood, colour contrast may be greatly reduced.

Argynnis tharossa Godart, [1819]: 289. ♂, ♀ syntypes, U.S.A.: New York, etc. (one syntype in RSM, Edinburgh; Grimshaw, 1898: 4). [There would be good grounds for considering this, and many other Godart names, as unjustified emendations; in this case, of *tharos* Drury, to which Godart includes a reference in his synonymy.]

Melitaea tharos (Drury); Boisduval & LeConte, 1833: 170, pl. 47, figs 3, 4.

Melitaea selenis Kirby, 1837: 289. Syntype(s), CANADA ('North America') (depository unknown; probably lost).

Melitaea pulchella Boisduval, 1852: 306. Syntypes, U.S.A.: [? New York] ('California') (not in BMNH). [See Tilden, 1970, concerning the type-material of this taxon.]

Melitaea pharos [sic!] (Drury); Harris, 1862: 289, figs 116, 117.

Melitaea marcia Edwards, [1869]: 207. Lectotype ♂, U.S.A.: New York, Hunter, Greene Co. (CM, Pittsburgh), designated by Brown (1966: 432, fig. 25).

Melitaea packardii Saunders in Packard, 1869: 256. Syntype(s), CANADA (depository unknown).

Phyciodes pascoensis Wright, 1906: 165, pl. 21, figs 198, a. Lectotype ♂, U.S.A.: E. Washington, Pasco (W. G. Wright) (CAS, San Francisco, Type no. 4308), designated by Tilden (1975: 23).

[*Phyciodes nycteis* (Doubleday); Wright, 1906: 164, pl. 21, fig. 197. Misidentification.]

Phyciodes tharos f. *reaghi* Reiff, 1913: 305, pl. 10, figs 1, 2. Holotype ♀, U.S.A.: Massachusetts, Franklin (A. L. Reagh) (depository unknown).

Phyciodes tharos (Drury); Röber, 1913: 436, pl. 89, row d [figs 1, 2]; Forbes, 1945: 154, 189; Holland, 1947: 135, pl. 18, figs 1-4, pl. 5, figs 20-22 (pupa).

Phyciodes tharos pascoensis f. *vern. herse* G. C. Hall, 1924: 110. Holotype ♀, CANADA: British Columbia, Taft (AMNH, New York).

Phyciodes tharos pascoensis f. *ab. nigrescens* G. C. Hall, 1924: 110. Holotype ♀, CANADA: British Columbia, Taft (AMNH, New York).

Phyciodes tharos tr. f. *dyari* Gunder, 1928: 167, fig. 18. Holotype ♂, U.S.A.: New Hampshire, Webster (USNM).

Phyciodes tharos tharos (Drury); Hall, 1928b: 35; Klots, 1951: 101, pl. 6, fig. 11 (pupa), pl. 13, fig. 14; Bauer, 1975: 144, pl. 44, figs 6, 8.

Phyciodes tharos f. *marcia* (Edwards); Hall, 1928b: 37.

Phyciodes tharos arctica dos Passos, 1935: 87; Forbes, 1945: 155; Klots, 1951: 101; Bauer, 1975: 144.

Holotype ♂, CANADA: Newfoundland, Port au Port, Table Mountain (G. C. Hall) (AMNH, New York).

Phyciodes tharos pascoensis Wright; Bauer, 1975: 144, pl. 77, figs 9, 10.

Phyciodes tharos distincta Bauer, 1975: 144. Syntype(s), U.S.A.: California, Calexico, Imperial Co. (depository not indicated).

♂ forewing 15-17 mm, upperside fulvous, markings black, without colour contrast, discal marks in s2 and s3 small or vestigial; hindwing fulvous discal band wide, the veins which cross the band not pigmented; underside with a prominent dark mark on outer margin between s2 and s5, often enclosing a pale lunule. ♀ similar, often larger.

Genitalia. In dorsal view, ♂ tegumen elongate, tapering slightly to rather wide apex, posterior border of juxta with central prominence. ♀, in dorsal view, sterigma deeply excavated, bursal duct firmly chitinised, bursal support rather long.

DISTRIBUTION. Widely distributed in North America, especially east of the Rocky Mountains; in Canada to 52°N., and southwards to Mexico.

DISCUSSION. There are two or more annual generations in suitable localities, with marked seasonal variation. In spite of wide distribution, regional (geographical) variation is slight, and Vawter & Brussard (1975) have recently commented on the apparent lack of geographical variability of various enzyme systems in this species. Oliver (1978a; 1978b; 1979) comments further on the genetics of this species, and reports on results from experimental hybridisations with *P. batesii* and *P. montanus*.

Phyciodes batesii (Reakirt)

(Figs 2, 193)

[*Melitaea tharos* (Drury); Boisduval & Leconte, 1833: pl. 47, fig. 5. Misidentification.]

Eresia batesii Reakirt, 1865: 226. ♂, ♀ syntypes, U.S.A.: Virginia, Winchester; New Jersey, Gloucester, Reakirt Coll. (lost?).

Phyciodes batesii (Reakirt); Röber, 1913: 436, pl. 89, row d [fig. 5]; Hall, 1928b: 38; Forbes, 1945: 154, 189; Holland, 1947: 136, pl. 17, figs 35, 36; Klots, 1951: 100, pl. 13, fig. 12; Bauer, 1975: 145, pl. 44, fig. 9.
Phyciodes batesii tr. f. *harperi* Gunder, 1932: 283. Holotype ♀, CANADA: Manitoba, McCreary, Gunder Coll. (present depository unknown).

♂ like *P. tharos* on both surfaces, but forewing underside black discal markings more extensive; hindwing underside yellow, faintly marked, dark shade along outer margin vestigial (if present). ♀ similar.

Genitalia. ♂ like *P. tharos*, in five specimens examined tegumen slightly more tapered, hooks closer together and more slender, probably within the range of normal variation.

DISTRIBUTION. E. Canada and NE. states of U.S.A., from Ontario and Quebec to Virginia and Nebraska, including New Jersey.

Phyciodes campestris (Behr)

(Figs 4, 5, 194–202)

Melitaea campestris Behr, 1863: 86.

Like *Phyciodes tharos*, ♂ forewing 17 mm, variable, upperside black pattern more heavily marked, discal band yellow, paler than postdiscal bands, yellow mark present at cell-end; hindwing underside marginal lunule in s3 large, yellow or white.

Genitalia. Like *tharos*, ♂ in dorsal view, scaphial hooks usually slightly smaller. ♀ as in *tharos*.

DISTRIBUTION. Western regions of North America from Alaska southwards to Nevada and Mexico. Two subspecies with similar genitalia.

Phyciodes campestris campestris (Behr)

(Figs 4, 194–199)

Melitaea campestris Behr, 1863: 86. ♀ syntypes, U.S.A.: California (various unstated localities) (destroyed by fire).

Melitaea pratensis Behr, 1863: 86. ♂ syntypes, U.S.A.: California, near San Francisco (destroyed by fire).

Eresia campestris (Behr); Reakirt, 1866a: 142.

[*Phyciodes orseis* (Edwards); Godman & Salvin, 1882: 193. Misidentification.]

Phyciodes pratensis (Behr); Röber, 1913: 436, pl. 89, row d [figs 3, 4].

Phyciodes campestris (Behr); Comstock, 1927: 116, pl. 39, figs 4–6; Holland, 1947: 137, pl. 17, figs 37, 38.

Phyciodes campestris campestris (Behr); Hall, 1929: 46; Forbes, 1945: 154–155, 189 (part); Bauer, 1975: 145, pl. 44, figs 10, 12.

As described above, colour contrast usually subdued.

DISTRIBUTION. Occurs especially in northern localities, Alaska, British Columbia etc., at moderate altitudes. The figure in 'Seitz' is too dark.

Phyciodes campestris camillus Edwards

(Figs 5, 200–202)

Phyciodes camillus Edwards, 1871b: 268. Lectotype ♂, U.S.A.: Colorado, Fairplay, Park Co. (*Mead*) (CM, Pittsburgh), designated by Brown (1966: 451, fig. 30).

Phyciodes emissa Edwards, 1871b: 269. Lectotype ♀, U.S.A.: Colorado, Denver, Denver Co. (*Mead*) (CM, Pittsburgh), designated by Brown (1966: 453, fig. 31).

Phyciodes camillus ab. *rohweri* Cockerell, 1913: 308, fig. 1. Holotype, U.S.A.: Colorado, North Boulder Creek, Boulder County, Canadian Zone, viii. 1907 (*S. A. Rohwer*) (depository unknown).

Phyciodes camillus ab. *tristis* Cockerell, 1913: 308, fig. 2. Holotype, U.S.A.: Colorado, Jim Creek, Boulder County, 7. ix. 1907 (*S. A. Rohwer*) (depository unknown).

Phyciodes camillus Edwards; Röber, 1913: 437, pl. 89, row d [figs 7, 8]; Holland, 1947: 138, pl. 17, figs 32–34; Klots, 1951: 99, pl. 12, fig. 5.

Phyciodes campestris tr. f. *mcDunnoughi* Gunder, 1928: 167, figs 19, 19a. Holotype ♂, ? CANADA: 'T.N.W., Olds?' (CNC, Ottawa).

Phyciodes campestris camillus Edwards; Hall, 1929: 47; Forbes, 1945: 155; Bauer, 1975: 146, pl. 78, fig. 5.

♂ like *P. campestris campestris*, but upperside markings brighter, black pattern reduced and colour contrast often quite lively, with bands of red and yellow; hindwing underside usually greyish rather than yellow.

DISTRIBUTION. South-western states of U.S.A., especially Colorado and California, flying there at 2000–3000 m.

Phyciodes montanus (Behr) stat. rev.

(Figs 3, 203–208)

Melitaea montana Behr, 1863: 85. Syntypes, U.S.A.: California, Los Angeles; headwaters of Tuolumne River; Yosemite Valley (destroyed by fire).

Melitaea orsa Boisduval, 1869: 55. LECTOTYPE ♂, U.S.A.: California, 'Interior' (BMNH), here designated [examined]. [Lectotype figured by Oberthür, 1914: 81, fig. 2178.]

Phyciodes montana (Behr); Röber, 1913: 437, pl. 89, row e [fig. 3] (♂); Comstock, 1927: 116, pl. 39, figs 7, 8; Hall, 1929: 45; Holland, 1947: 138, pl. 17, figs 26, 27.

Phyciodes campestris montanus (Behr); Forbes, 1945: 155, 189; dos Passos, 1964.

Phyciodes campestris montana (Behr); Bauer, 1975: 145.

Like *P. campestris camillus* but slightly larger, ♂ forewing 16–18 mm, upperside black markings reduced, colours brighter. ♀ similar.

Genitalia. ♂ like *campestris*, in three specimens apical section of valve slightly shorter and more massive. Hall (1929: 46) also considered 'valve shorter than in *P. campestris*, the apical process less developed'.

DISTRIBUTION. Seen only from California, especially the Sierra Nevada; recorded flying at 2000–3000 m.

DISCUSSION. Dos Passos (1964), probably following Forbes (1945), included *montanus* with *P. campestris* as a subspecies. Hall (1929: 45) considered that *montanus* should have specific rank, and I agree that there are small distinctive characters in the male genitalia; further, the external characters are constant and recognisable. It is uncertain whether *P. campestris camillus* also flies with *montanus* at high levels in the Sierra Nevada, California.

Phyciodes mylittus (Edwards)

(Figs 6, 7, 209–211)

Melitaea mylitta Edwards, 1861: 160.

♂ forewing 16–20 mm, variable, outer margin usually slightly excavate. Upperside fulvous yellow, black pattern well defined, basal areas not suffused black; hindwing upperside fulvous, discal area unmarked, black postdiscal dots usually forming a complete series (6 dots). ♀ similar.

Genitalia. ♂ tegumen like *P. campestris*, but terminal lateral hooks smaller, more widely separated.

DISTRIBUTION. From S. Canada and British Colombia through the western states of U.S.A. to California (eastwards to foothills of the Rocky Mts.) to Mexico and Guatemala. Three subspecies with similar genitalia.

Phyciodes mylittus mylittus (Edwards)

(Figs 6, 209–211)

Melitaea mylitta Edwards, 1861: 160. Neotype ♂, U.S.A.: California, Sanyan Hill, San Francisco (CAS, San Francisco), designated by Brown (1966: 438, fig. 27).

Melitaea collina Behr, 1863: 86. Syntypes, U.S.A.: California, near San Francisco; hills of Contra Costa (? destroyed by fire).

Melitaea epula Boisduval, 1869: 54. LECTOTYPE ♂, U.S.A.: California, 'Interior' (BMNH), here designated [examined]. [Lectotype figured by Oberthür, 1914: 80, pl. 259, fig. 2176.]

- Phyciodes mylitta* (Edwards); Röber, 1913: 437, pl. 89, row e [fig. 1] (♂); Comstock, 1927: 117, pl. 39, figs 13–15; Forbes, 1945: 153, 189; Holland, 1947: 138, pl. 17, figs 40, 41; Tilden, 1970: 97.
- Phyciodes mylitta mylitta* (Edwards); Hall, 1928*b*: 42; Bauer, 1975: 149, pl. 16, figs 9, 10.
- Phyciodes mylitta* tr. f. *collinsi* Gunder, 1930: 62. Holotype ♂, U.S.A.: California, Collin's Ranch, Voltair, Gunder Coll. (present depository unknown).
- Phyciodes mylitta* ab. *macyi* Fender, 1930: 182. Holotype, U.S.A.: Oregon, McMinnville (*Fender*) (depository unknown).
- ? *Phyciodes mylitta arizonensis* Bauer, 1975: 149, pl. 43, fig. 8. Syntypes, U.S.A.: central & south-eastern Arizona; New Mexico, Sonora; south-western Colorado (depository not indicated).

♂ forewing usually small, 16–18 mm, described above.

FLIGHT. In lowland areas, occurs in a succession of broods from April to October, but double-brooded at altitudes of 2300 m or more.

DISTRIBUTION. Western states, from British Columbia to California, and east to foothills of the Rocky Mts. in Montana and Colorado. Guppy (1974) and Shepard (1977) discuss the apparently recent establishment of this species on Vancouver Island.

Phyciodes mylittus mexicanus Hall

- Phyciodes mylitta mexicana* Hall, 1928*b*: 44. Holotype ♂, MEXICO: Jalapa (*Hoegel*) (BMNH) [examined].
- Phyciodes mylitta mexicana* Hall; Bauer, 1975: 150.

Both sexes like *P. m. mylittus*, but upperside fulvous ground colour slightly darker and all black markings slightly heavier.

FLIGHT. November, December, April, probably in two broods. Occurs at 1300 m or more.

DISTRIBUTION. Eastern Mexico.

Phyciodes mylittus thebais Godman & Salvin

(Fig. 7)

- Phyciodes thebais* Godman & Salvin, 1878*a*: 267. Holotype ♂, MEXICO: Mountains of Oaxaca (*Fenocchio*) (BMNH, Type no. Rh. 8434; Gabriel, 1927: 118) [examined].
- Phyciodes thebais* Godman & Salvin; Godman & Salvin, 1882: 194, pl. 21, figs 13–15; Röber, 1913: 436.
- Phyciodes mylitta thebais* Godman & Salvin; Hall, 1928*b*: 44; Bauer, 1975: 150.

Like *P. mylittus mylittus*, ground-colour paler fulvous, almost obscured by greatly extended black markings. ♀ similar.

FLIGHT. Specimens dated April and July.

DISTRIBUTION. Western Mexico, Guatemala.

Phyciodes pallidus (Edwards)

(Fig. 8)

- Melitaea pallida* Edwards, 1864: 505. Neotype ♀, U.S.A.: Colorado, Flagstaff Mt., Boulder Co. (CM, Pittsburgh), designated by Brown (1966: 443, fig. 28).
- Eresia mata* Reakirt, 1866*a*: 142. Syntype(s), U.S.A.: Rocky Mountains, Colorado Territory (Reakirt Coll.; lost?). **Syn. n.**
- Phyciodes barnesi* Skinner, 1897: 154. 'Many' ♂ syntypes, U.S.A.: Colorado, Glenwood Springs (*W. Barnes*) (CM, Pittsburgh).
- Phyciodes barnesi* Skinner; Röber, 1913: 436, pl. 89, row e [fig.2] (♂); Holland, 1947: 138, pl. 18, fig. 5 (type).
- Phyciodes mylitta barnesi* Skinner; Hall, 1928*b*: 43.
- Phyciodes mylitta pallida* (Edwards); Brown, 1966: 443.
- Phyciodes pallida pallida* (Edwards); Tilden, 1970: 96; Bauer, 1975: 148, pl. 44, fig. 5.
- Phyciodes pallida barnesi* Skinner; Tilden, 1970: 96; Bauer, 1975: 149, pl. 43, fig. 7, pl. 78, fig. 6.

♂ forewing 18–21 mm, upperside like *P. m. mylittus*, no constant distinctive external character except larger size. ♀ black markings sometimes extended.

Genitalia. ♂ like *P. m. mylittus*.

FLIGHT. Occurs as a single annual brood.

DISTRIBUTION. SW. Canada and Washington State southwards to Colorado and Arizona.

DISCUSSION. Larval and pupal characters are said to differ from those of *P. m. mylittus*.

Phyciodes orseis Edwards

(Fig. 212)

Phyciodes orseis Edwards, 1871a: 206. Lectotype ♂, U.S.A.: California, Napa County, Mt. St. Helena (*Henry Edwards*) (AMNH, New York), designated by Brown (1966: 450, fig. 29).

Phyciodes orseis Edwards; Röber, 1913: 436, pl. 89, row d [fig. 5]; Comstock, 1927: 117, pl. 39, figs 9–12; Hall, 1929: 48; Forbes, 1945: 153, 155, 189; Holland, 1947: 137, pl. 17, fig. 31 ('type'; designation rejected by Brown, 1966: 450); Scott, 1974 (early stages).

Phyciodes orseis tr. f. *edwardsi* Gunder, 1927: 135, pl. 2, fig. 5. Holotype ♀, U.S.A.: California, W. Barnes Coll. (present depository uncertain).

Phyciodes orseis Edwards; Bauer, 1975: 147, pl. 43, fig. 6.

♂ forewing 20 mm, like *P. campestris*, upperside black pattern extensive, colour contrast usually present in pale areas. ♀ similar.

Genitalia. ♂ like *P. m. mylittus*.

DISTRIBUTION. Mountainous areas of western states of U.S.A. (coastal ranges), from Washington State to California.

DISCUSSION. The species is said to fly in association with *P. campestris* and *P. m. mylittus* (Scott, 1974), but separation from *campestris* may be extremely difficult.

Phyciodes herlani Bauer **stat. n.**

Phyciodes (Phyciodes) orseis herlani Bauer, 1975: 148, pl. 45, figs 9, 10. ♂, ♀ syntypes, U.S.A.: Nevada, Glenbrook Creek, Douglas Co. (depository not indicated).

Like *P. orseis* and *P. campestris*, upperside black markings greatly reduced, fulvous areas paler, colour contrast present but less striking. ♀ similar.

Genitalia. ♂ like *P. m. mylittus*.

DISTRIBUTION. California and Nevada (Douglas Co.), not rare at 2000 m or more.

Phyciodes pictus (Edwards)

(Figs 9, 213, 214)

Melitaea picta Edwards, 1865: 201.

♂ small, forewing 11–12 mm, like *P. campestris* but with colour contrast on upperside, cell-spot and discal spots pale yellow; underside apex bright yellow, usually unmarked; hindwing underside yellow, darker markings vestigial or absent. ♀ similar, often slightly larger.

Genitalia. Described below.

DISTRIBUTION. South-western states of U.S.A., and Mexico.

Two subspecies with slightly different genitalia.

Phyciodes pictus pictus (Edwards)

(Figs 9, 213)

Melitaea picta Edwards, 1865: 201. Lectotype ♂, U.S.A.: Nebraska, North Platte, Lincoln Co., (Ridings) (FMNH, Chicago), designated by Brown (1966: 457, fig. 32).

Phyciodes canace Edwards, 1871a: 206. Neotype ♂, U.S.A.: Arizona, nr Tucson, Pima Co. (*Morrison*) (CM, Pittsburgh), designated by Brown (1966: 461, fig. 331).

Phyciodes picta (Edwards); Röber, 1913: 437, pl. 89, row e [figs 4, 5]; Comstock, 1927: 118; Holland, 1947: 139; pl. 17, figs 20, 21.

Phyciodes picta ab. *jemezensis* Brehme, 1913: 194, pl. 7, figs 7, 8. Holotype ♂, U.S.A.: New Mexico, Jemez Springs, bred by J. Woodgate, Brehme Coll. (present depository unknown).

Phyciodes picta picta (Edwards); Hall, 1929: 49; Forbes, 1945: 154–155, 189; Brown, 1966: 455; Bauer, 1975: 146, pl. 44, fig. 11.

Phyciodes picta canace (Edwards); Brown, 1966: 457; Bauer, 1975: 147, pl. 16, fig. 11.

Upperside colour contrast very bright.

Genitalia. ♂ tegumen short, wide, terminal lateral hooks relatively large and strong. ♀ not examined.

DISTRIBUTION. U.S.A., southern states, from Arizona and Kansas southwards to N. Mexico (N. Sonora). Two broods, upperside black markings slightly heavier in first brood.

Phyciodes pictus pallescens (Felder)

(Fig. 214)

Eresia pallescens Felder, 1869: 469. ♂, ♀ syntypes, MEXICO: Puebla, region of Cuernavaca (*Hedemann*) (NM, Vienna; BMNH) [3 ♂, 3 ♀ ? syntypes from Puebla in BMNH examined].

Phyciodes pallescens (Felder); Godman & Salvin, 1882: 195, pl. 21, figs 18, 19; 1901: 678; Röber, 1913: 437, pl. 89, row f [fig. 10] (♂).

Phyciodes picta pallescens (Felder); Hall, 1929: 50; Forbes, 1945: 154.

♂ like *P. pictus pictus*, upperside markings less brilliant, forewing underside apical area with vestigial markings; hindwing underside dark markings slightly indicated. ♀ similar.

Genitalia. ♂ like *P. pictus pictus* but tegumen perhaps slightly narrower in two preparations. The genitalia are minute and it is difficult to make a comparison.

DISTRIBUTION. According to Hall (1929: 50) this subspecies is restricted to central and southern Mexico.

DISCUSSION. *P. pallescens* is placed as a distinct species by some authors.

Phyciodes phaon (Edwards)

(Figs 10, 215, 216)

Melitaea phaon Edwards, 1864: 505. Neotype ♂, U.S.A.: Georgia, St. Simon's Island, Glynn Co. (CM, Pittsburgh), designated by Brown (1966: 437, fig. 26).

Phyciodes phaon (Edwards), winter form ('aestiva'); Edwards, 1878 (descriptive term).

Phyciodes phaon (Edwards), summer form ('hiemalis'); Edwards, 1878 (descriptive term).

Phyciodes phaon (Edwards); Godman & Salvin, 1901: 677; Röber, 1913: 436, pl. 89, row c [figs 7, 8]; Comstock, 1927: 116, pl. 39, figs 1–3; Holland, 1947: 137, pl. 17, figs 22, 23; Bauer, 1975: 143, pl. 44, fig. 7; Riley, 1975: 79, pl. 12, fig. 18.

Phyciodes phaon maya Hall, 1928b: 41. Holotype ♂, GUATEMALA: Lake Amatitlan, 3800 ft [1260 m], October (BM, Brighton) [examined]. *Syn. n.*

Phyciodes phaon phaon (Edwards); Hall, 1928b: 40.

Phyciodes phaon phaon f.t. 'aestiva'; Hall, 1928b: 40.

Phyciodes phaon f. *phaon*; Forbes, 1945: 154.

Phyciodes phaon f. 'hiemalis'; Forbes, 1945: 154; Brown, 1966: 464.

Phyciodes phaon f. 'aestiva'; Brown, 1966: 464.

♂ forewing 11–13 mm, upperside like *P. pictus*, but colour contrast less brilliant, post-discal band from s1b–s4 often fulvous in spring brood but in later broods bright yellow and very prominent, forewing underside apex with usual marginal and submarginal markings; hindwing underside all markings well defined, ground colour greyish in early brood, pale cream in later broods. ♀ similar.

Genitalia. ♂ like *P. pictus*, in dorsal view not quite so wide, terminal hooks very robust; penis slender. ♀ not examined.

DISTRIBUTION. U.S.A. (all southern states), Cayman Islands, Mexico, Guatemala, British Honduras. Recorded from Cuba (Riley, 1975). Flies in two or three annual broods, with marked seasonal variation.

Phyciodes vesta (Edwards)

(Figs 11, 217, 218)

Melitaea vesta Edwards, 1869: 371.

♂ small, forewing 13–14 mm, upperside like *P. phaon*, but without colour contrast and yellow markings; hindwing underside markings well defined, especially postdiscal macular band. ♀ similar.

Genitalia. ♂ distinctive; tegumen short, massive, two hooks at each angle of scaphial extension, additional short hook sometimes present. ♀ bursal duct short, chitinised, scutum large.

DISTRIBUTION. Local but widely distributed in south-western states of U.S.A., Guerrero in Mexico, Guatemala.

Two subspecies, with similar genitalia.

Phyciodes vesta vesta (Edwards)

(Figs 11, 217, 218)

Melitaea vesta Edwards, 1869: 371. Neotype ♂, U.S.A.: Texas, Neu Braunfels, Comal Co. (CM, Pittsburgh), designated by Brown (1966: 463, fig. 34).

Phyciodes boucardi Godman & Salvin, 1878a: 268. Holotype ♂, MEXICO: Putla (*Rébouch*) (BMNH Type no. Rh. 8438; Gabriel, 1927: 23) [examined].

Phyciodes vesta (Edwards); Godman & Salvin, 1882: 195; 1901: 678; Röber, 1913: 436, pl. 89, row c [fig. 5]; Hall, 1929: 50; Forbes, 1944; Holland, 1947: 136, pl. 17, figs 17–19; Bauer, 1975: 142, pl. 45, fig. 14.

Phyciodes boucardi Godman & Salvin; Godman & Salvin, 1882: 194, pl. 21, figs 16, 17; 1901: 678 (gen. 2); Röber, 1913: 437, pl. 89, row e [figs 8, 9].

Melitaea arida Skinner, 1917: 328. Holotype, U.S.A.: Arizona, Cochise Co. (*F. Haimbach*) (CM Pittsburgh).

Phyciodes vesta vesta (Edwards); Hall, 1929: 51.

[? *Phyciodes thebais* Godman & Salvin; Holland, 1947: 137, pl. 59, fig. 22. Misidentification.]

The markings of the upperside are regular and complete.

DISTRIBUTION. South-western states of U.S.A., Northern Mexico. Flies in two annual broods, the summer brood (gen. 2, f. *boucardi*) has the underside hindwings heavily marked with purplish brown.

Phyciodes vesta graphica (Felder)

Eresia graphica R. Felder, 1869: 470. ♂, ♀ syntypes, MEXICO: Huahuapan, *Hedemann* (NM, Vienna ?).

Phyciodes vesta vestalis Hall, 1929: 52. Holotype ♂, GUATEMALA (BM, Brighton) [examined]. *Syn. n.* [*Phyciodes vesta vesta* (Edwards); Hall, 1929: 51, in part. Misidentification.]

♂ slightly larger than nominate *P. vesta*, upperside tone of fulvous ground colour more intense and black markings slightly extended.

DISTRIBUTION. S. Mexico and Guatemala, doubtfully recognisable as a valid subspecies.

DISCUSSION. *Eresia graphica* was described by R. Felder from specimens collected at Huahuapan by Hedemann; these are presumed to be in the NM, Vienna. A male from 'Cuernavaca', ex Felder Coll., is now in the BMNH and bears Felder's determination label '*Eresia graphica* Feld.', and an ex Rothschild 'type' label. However, it seems doubtful that this specimen is part of the original type-series, although it was possibly in the Felders' collection at the time of description.

PHYSTIS gen. n.

Type-species: *Eresia simois* Hewitson. Gender: feminine.

Small butterflies, wings broad, forewing outer margin convex. Upperside brown, markings small yellow spots arranged across the wings in regular transverse series; on hindwing upperside each spot of the postdiscal series encloses a small blind pupil.

Genitalia. ♂ tegumen in dorsal view short, wide, slightly chitinized, scaphial extension vestigial, posterior border of juxta gently convex or almost straight, saccus deeply cleft, posterior section of valve terminating in a simple, incurved pointed apex, harpe slightly variable; penis slender, probably lacking ostium-keel. ♀ genitalia unusually simple, in dorsal view ostium bursae exposed, the duct not chitinized, sterigma shallow, the cup-shaped bursal support arising very close to ostium, post-vaginal scutum large.

DISTRIBUTION. Brazil, Argentina, Uruguay, Bolivia, Paraguay, NE. Peru.

DISCUSSION. The genus includes a single divergent and very variable species, with wing markings which suggest relationship with the *Phyciodes* of North America. This is not confirmed by the genitalia, which are distinctive, especially those of the female, and unlike those of any other species.

Phystis simois (Hewitson) comb. n.

(Figs 12, 13, 219–223)

Eresia simois Hewitson, [1864].

Size very variable, ♂ forewing 10–15 mm, upperside markings yellow to cream, prominent or greatly reduced in size by extension of the brown ground colour. On underside of forewing a black postdiscal mark is characteristic and usually prominent. On hindwing upperside a postdiscal series of ocellar spots recalls *Phyciodes tharos* and its allies.

Genitalia. See generic description. The organs are very small. In a series of seven preparations I have not found any consistent variation to suggest separation into two species. The variation observed has been due, probably, to small differences in rotation of the parts within the mountant.

DISTRIBUTION. Widely distributed in Brazil, extending southwards to N. Argentina and westwards to Peru, Uruguay and Bolivia.

Two subspecies.

Phystis simois simois (Hewitson)

(Figs 12, 219, 220)

Eresia simois Hewitson, [1864]: [21], pl. [11], figs 30, 31. LECTOTYPE ♀, BRAZIL (BMNH, Type no. Rh. 8435), here designated [examined].

Phyciodes pedrona Moulton, 1909: 103. Holotype ♂, BRAZIL: 'Minas Gerães, DiscoBERTO, near João Pedro's house' (*W. J. Burchell*) (UM, Oxford, Type no. 1149) [examined]. **Syn. n.**

Phyciodes pedrona Moulton; Röber, 1913: 436.

Phyciodes simois simois (Hewitson); Hall, 1929: 53.

Phyciodes simois pedrona Moulton; Hall, 1929: 53.

Phyciodes (Tritanassa) simois (Hewitson); Forbes, 1945: 189.

Phyciodes (Tritanassa) pedrona Moulton; Forbes, 1945: 189.

♂ forewing 10–11 mm, usually very small, upperside yellow markings at base and in cell obscured by extension of brown ground colour, but with an oblique discal series of small yellow spots rather better defined; hindwing upperside markings small and regular; underside bright yellowish brown, on forewing a wide, black, postdiscal area extends from costa to inner margin, with white spots, as on upperside, very prominent. ♀ similar, but larger.

DISTRIBUTION. N. Brazil: Pernambuco, Bahia, etc.

Phystis simois variegata (Röber)

(Figs 13, 221–223)

Phyciodes variegata Röber, 1913: 437, pl. 89, row f [fig. 3] (♂). Holotype ♂, ARGENTINA: La Soledad, Prov. Entre Rios (*E. A. Britton*) (BMNH) [examined].

Phyciodes simois ab. *nigrina* Hayward, 1931: 51, pl. 11, fig. 10. Holotype ♂, ARGENTINA: Prov. Córdoba, Yacanto (Breyer Coll.; present depository unknown).

Phyciodes simois variegata Röber; Hall, 1929: 53.

Phyciodes simois pratti Hall, 1935: 221. Holotype ♂, PERU: W. slopes of Andes, 4000 ft [1330 m] (BM, Brighton) [examined]. **Syn. n.**

Phyciodes pedrona variegata Röber; Hayward, 1952: 290; 1964b: 342, pl. 18, fig. 6.

♂ forewing 13–15 mm, variable, upperside with yellow spots in pattern similar to *simois simois* but larger, postdiscal costal bar of 4 macules prominent and spots in s1b, s2 and s3 enlarged, forming with the costal bar, a broken band across the wing; forewing underside black postdiscal area reduced, spots usually yellow (not white), submarginal area with single spot in s3; hindwing underside pale buff, markings vestigial, if present. ♀ usually slightly larger, markings also larger and paler.

DISTRIBUTION. Brazil, especially in southern regions, N. Argentina, Uruguay, Bolivia, Peru.

DISCUSSION. The two subspecies, as described, represent the extremes of a well-defined cline. The geographical limits of *simois simois* are found in northern Minas Gerais, and from there southwards through C. and S. Brazil there are larger forms with intermediate characters, often difficult to place with one or other of the recognised subspecies. In Argentina and in Uruguay *simois variegata* is fully developed. The species is represented in the BMNH by occasional specimens from Bolivia and Peru, but the material is very scanty and insufficient to show local character.

The ♂ holotype of *Phyciodes pedrona* Moulton is very small and in my view is referable to nominate *simois*. On the forewing upperside the yellow discal spots are slightly more prominent than usual. A single paratype in the BMNH has similar characters.

ANTHANASSA Scudder

Anthanassa Scudder, 1875: 239, 268. Type-species: *Melitaea texana* Edwards, by subsequent designation [= *Eresia cincta* Edwards, by original designation. Misidentification] (see ICZN, 1967, *Bull. zool. Nom.* 24: Opinion 839: 337). Gender: feminine.

Tritanassa Forbes, 1945: 171 (as subgenus of *Phyciodes*). Type-species: *Eresia drusilla* Felder & Felder, by original designation. **Syn. n.**

Butterflies of less than median size, forewing apex often truncate, outer margin excavate. On uppersides all species are black or dark brown with white or yellow markings arranged in a characteristic pattern, on forewing rounded white or yellow submarginal spots in s1b and s4 are constant, making a useful generic character; hindwing upperside with a transverse or slender discal band, and a series of submarginal and marginal lunules present in most species. Sexes similar, or nearly so.

Genitalia. In most species ♂ tegumen is little chitinised, scaphial extension often extremely fragile, membranous; valve apex slender, preapical tooth well developed, so that the apex appears to be bifid in dorsal view (Fig. 229); saccus deeply cleft; penis slender with a small morula, ostium keel absent. ♀ bursal duct short, bursal support usually small but well defined.

In *A. drusilla* and the 11 species which follow it in this work, the genitalia are uniform, but good specific characters are present in the genitalia of the seven remaining species.

DISTRIBUTION. The genus is well developed in Mexico, Central America and western South America, from Venezuela and Colombia to Bolivia, in mountainous regions. It is represented in eastern regions, including Brazil, Paraguay and northern Argentina, by one species, *A. hermas*.

A single species, *A. frisia*, occurs in Jamaica, Cuba and in other islands of the Greater Antilles. The species are not mimetic.

Key to species of *Anthanassa*

- 1 In dorsal view, lateral walls of scaphial extension dentate (Fig. 255) 2
 - In dorsal view scaphial walls not dentate 6
- 2 Spiny area of scaphium in a wide band (Fig. 255) *hermas* (p. 104)
 - Spines confined to lateral walls of scaphium (Fig. 258) 3
- 3 Upperside markings very pale on dark grey-brown *tulcis* (p. 105)
 - Upperside markings fulvous or yellow 4
- 4 Upperside markings yellow on medium-brown *dubia* (p. 106)
 - Upperside markings fulvous 5
- 5 Hindwing upperside prediscal band short *frisias* (p. 105)
 - Hindwing upperside prediscal band well developed *taeniata* (p. 106)
- 6 Valve apex with 2 or 3 prominent teeth 7
 - Valve apex appears bifid 10
- 7 Valve apical teeth short *sosis* (p. 106)
 - Valve medial apical tooth long 8
- 8 Underside forewing base bright orange *sitalces* (p. 107)
 - Underside forewing base grey-brown 9
- 9 Valve apex medial tooth very long (Fig. 267) *drymaea* (p. 107)
 - Valve apex medial tooth shorter (Fig. 269) *cortes* (p. 107)
- 10 Hindwing upperside transverse band well-defined 11
 - Hindwing upperside transverse band obscure or absent 17
- 11 Hindwing upperside transverse band yellow 12
 - Hindwing upperside transverse band white 15
- 12 Band wide at outer margin, tapering rapidly 13
 - Hindwing not so marked 14
- 13 ♂ forewing 19 mm, single spot in s1b, hindwing underside pallid buff, markings obscure *dracaena* (p. 99)
 - ♂ forewing 17 mm, two spots in s1b, hindwing underside markings brighter, grey and brown *phlegias* (p. 99)
- 14 Hindwing upperside marginal lunules of even size *drusilla* (p. 96)
 - Hindwing upperside marginal lunules enlarged in s6 and s7 *ptolyca* (p. 97)
- 15 Forewing base orange-red *texana* (p. 99)
 - Forewing not so marked 16
- 16 Forewing upperside markings yellowish *alexon* (p. 100)
 - Forewing markings white on black *ardys* (p. 98)
- 17 Forewing upperside with large orange costal mark, other markings vestigial or absent *fulviplaga* (p. 104)
 - Forewing not so marked 18
- 18 Forewing upperside with orange postdiscal oblique band *crithona* (p. 104)
 - Forewing not so marked 19
- 19 Hindwing upperside gleaming blue-black, marginal border black, otherwise unmarked 20
 - Hindwing upperside not so marked 21
- 20 Forewing upperside with yellow markings in pattern like *drusilla* *otanes sopolis* (p. 103)
 - Upperside markings greatly reduced or absent *otanes otanes* (p. 103)
- 21 Upperside hindwing dark brown, markings vestigial, if present 22
 - Upperside hindwing postdiscal markings combine to form a series of ocelliform circles 23
- 22 Forewing upperside discal area chestnut-brown *argentea* (p. 102)
 - Forewing upperside very dark, markings obscure if present *atronia* (p. 102)
- 23 Forewing upperside dark brown, markings vestigial if present *acesas* (p. 101)
 - Forewing upperside markings well developed 24
- 24 Hindwing upperside yellow discal band obscure, divided into macules by dark veins *nebulosa* (p. 101)
 - Hindwing upperside discal band absent *annulata* (p. 103)

Anthanassa drusilla (Felder & Felder) **comb. n.**

(Figs 14–16, 224–228)

Eresia drusilla Felder & Felder, 1861: 103.

♂ forewing size variable, 14–17 mm, upperside dark brown, markings orange-fulvous to yellow-buff, individually and locally variable; hindwing upperside pale discal band present, usually with postdiscal and submarginal spots and lunules. ♀ slightly larger, with similar markings.

Genitalia. ♂ in dorsal view, tegumen short, membranous, extremely fragile; posterior border of juxta wide, concave or slightly wavy, lateral angles prominent. ♀ ductus chitinised, short, bursal support shallow, post-vaginal scutum extensive.

DISTRIBUTION. From Mexico across central and western South America to Peru, Ecuador and Bolivia.

Four subspecies, all with similar genitalia.

Anthanassa drusilla drusilla (Felder & Felder)

(Figs 14, 224–228)

Eresia drusilla Felder & Felder, 1861: 103. **LECTOTYPE** ♂, VENEZUELA (*Moritz*) (BMNH, specimen bears original label of Felders' inscribed 'drusilla H.-S.', locality data, and 'type') here designated [examined]. (A specimen labelled BM Type no. Rh. 8447 and listed by Gabriel, 1927: 42, is a ♀ paralectotype.)

Phyciodes flavimacula Röber, 1913: 442, pl. 90, row c [fig. 2] (♀). **LECTOTYPE** ♂, COLOMBIA: Coreato, Cauca Valley (*Paine & Brinkley*) (BMNH, specimen bears Röber's determination label, and is also labelled 'type') here designated [examined].

Phyciodes drusilla drusilla (Felder & Felder); Hall, 1929: 86.

♂ forewing 15–16 mm, variable, upperside markings bright orange-fulvous, hindwing underside pale discal band usually prominent. ♀ usually larger, upperside markings slightly paler, vague basal markings often present on forewing upperside.

DISTRIBUTION. Venezuela, Colombia, Ecuador, Panama (rare).

Anthanassa drusilla lelex (Bates)

Melitaea lelex Bates, 1864a: 82. **LECTOTYPE** ♂, PANAMA: Lion Hill (*McLeannan*) (BMNH, Type no. Rh. 8445; Gabriel, 1927: 72), here designated [examined].

Melitaea aethes Bates, 1864a: 82. **LECTOTYPE** ♂, GUATEMALA: Central Valleys (*Godman & Salvin*) (BMNH Type no. Rh. 8443; Gabriel, 1927: 9), here designated [examined].

Melitaea stesilea Bates, 1864a: 82. **LECTOTYPE** ♀, GUATEMALA: interior (BMNH Type no. Rh. 8444; Gabriel, 1927: 113), here designated [examined]. [♀ of f. *aethes*.]

[*Phyciodes ptolyca* (Bates); *Godman & Salvin*, 1882: 201, pl. 21, fig. 34 (♀), fig. 35 (♂ underside), fig. 36 (♂ underside). Misidentification.]

[*Phyciodes ptolyca* (Bates); Röber, 1913: pl. 90, row b [fig. 3] (♂), [fig. 4] (♂). Misidentification.]

Phyciodes drusilla lelex (Bates); Hall, 1929: 88.

Phyciodes drusilla aethes (Bates); Hall, 1929: 88.

♂ upperside like *A. drusilla drusilla* but markings paler, ochre-yellow or buff. In some districts postdiscal and submarginal markings become less distinct (f. *aethes*). ♀ similar, markings often pale.

DISTRIBUTION. Mexico and Central America, widely distributed, with transition zone to nominate *drusilla* in Panama, with minor local variation.

Anthanassa drusilla alceta (Hewitson)

(Fig. 15)

Eresia alceta Hewitson, 1869a: 28, [index]. **LECTOTYPE** ♂, ECUADOR: Rio Verde (*Buckley*) (BMNH, Type no. Rh. 8454; Gabriel, 1927: 9), here designated [examined]. [Incorrectly identified and labelled ♀ by Hewitson.]

Phyciodes flavimacula conflua Röber, 1913: 442, pl. 90, row c. Syntype(s), PERU: Chanchamayo (depository unknown).

Phyciodes drusilla alceta (Hewitson); Hall, 1929: 89.

♂ like *A. drusilla drusilla*, forewing 16–18 mm, upperside markings orange-fulvous, postdiscal costal bar and discal spots fused to form a band 2–3 mm wide; hindwing upperside fulvous discal band 3 mm wide, veins crossing band little, if at all, darkened.

DISTRIBUTION. Ecuador, N. Peru. The distribution of this rather striking form appears to be well defined, but Hall records intermediate specimens grading into nominate *drusilla*.

Anthanassa drusilla verena (Hewitson)

(Fig. 16)

Eresia verena Hewitson, [1864]: [20], pl. [10], figs 27, 28. LECTOTYPE ♂, BOLIVIA (BMNH, Type no. Rh. 8455; Gabriel, 1927: 122), here designated [examined].

Phyciodes verena (Hewitson); Röber, 1913: 440, pl. 90, row a [fig. 1] (♂).

Phyciodes drusilla verena (Hewitson); Hall, 1929: 89.

♂ forewing 16–17 mm, upperside like *drusilla drusilla*, orange-fulvous discal band complete from costa to inner margin, 2–3 mm wide; hindwing upperside postdiscal area clear orange-fulvous, 3–4 mm wide. ♀ larger, forewing 19 mm, upperside markings slightly paler and more extensive.

DISTRIBUTION. Bolivia. This striking form appears to be uncommon but constant where it occurs.

Anthanassa ptolyca (Bates) **comb. n.**

(Figs 17, 229, 230)

Melitaea ptolyca Bates, 1864a: 81.

Like *Anthanassa drusilla*, ♂ forewing 15–18 mm, upperside markings yellow to white, hindwing postdiscal markings vestigial or absent, submarginal lunules present, enlarged in s7 and s8. ♀ larger, markings usually extended.

Genitalia. ♂ in dorsal view like *A. drusilla*, slightly less massive, tegumen often better defined, scaphial extension tapering. ♀ bursal support small, scutum very large.

DISTRIBUTION. From Mexico southwards through Central America to Venezuela.

Two subspecies or clinal forms.

Anthanassa ptolyca ptolyca (Bates)

(Figs 17, 229, 230)

Melitaea ptolyca Bates, 1864a: 81. LECTOTYPE ♂, GUATEMALA: Chisoy Valley (*Godman & Salvin*) (BMNH, Type no. Rh. 8448; Gabriel, 1927: 101), here designated [examined].

Phyciodes ptolyca (Bates); *Godman & Salvin*, 1882: pl. 21, fig. 32 (♂), fig. 33 (♂ underside), fig. 34 (♀ underside).

Phyciodes carrera Hall, 1917: 162. LECTOTYPE ♂, GUATEMALA: L. Amatitlan, 4000 ft [1330 m] (BM, Brighton), here designated [examined]. [Specimen bears Hall's ms type label.]

Phyciodes ptolyca ptolyca (Bates); Hall, 1929: 92.

Upperside markings bright orange-yellow in both sexes, ♂ forewing underside base yellow; hindwing discal band well-defined.

DISTRIBUTION. Mexico, Guatemala, Nicaragua, Venezuela.

Anthanassa ptolyca amator (Hall)

Phyciodes ptolyca amator Hall, 1929: 92. Holotype ♂, MEXICO: Venta de Zopilote, Guerrero, 2800 ft [930 m], (*H. H. Smith*) (BMNH) [examined].

Upperside markings pale yellow to cream-white, hindwing discal band narrow; underside forewing base pale yellow-brown.

DISTRIBUTION. Western Mexico, flying at altitudes of 600–1800 m.

DISCUSSION. The status of this form is uncertain since all specimens in the BMNH, and in the BM, Brighton (Hall Coll.), came from a single locality.

Anthanassa ardys (Hewitson) **comb. n.**

(Figs 18, 19, 231–233)

Eresia ardys Hewitson, [1864]: [22].

♂ forewing 16–19 mm, upperside black with small white markings, which include a cell-spot slightly before cell-end, and a small submarginal spot in s3, vestiges of yellowish basal striae sometimes present; hindwing upperside discal band white; hindwing underside variable, marbled in grey, pale and dark brown. ♀ larger, upperside markings cream-white, usually expanded, wing-bases with obscure yellowish striations.

Genitalia. ♂ like *Anthanassa drusilla*, tegumen better defined, posterior border of juxta gently concave, penis slender. ♀ not examined.

DISTRIBUTION. From S. Mexico through Central America to Colombia.

Two subspecies with similar genitalia.

Anthanassa ardys ardys (Hewitson)

(Figs 18, 231, 232)

Eresia ardys Hewitson, [1864]: [22], pl. [11], figs 35, 36. LECTOTYPE ♂, MEXICO: Orizaba (BMNH, Type no. Rh. 8442; Gabriel, 1927: 15), here designated [examined].

? *Eresia genigueh* Reakirt, 1865: 225. Syntype(s) ♂, U.S.A.: Los Angeles, California (Reakirt Coll.; present depository unknown). [Treated by Hall, 1929: 90, as a synonym of *ardys ardys*, without comment; if this is correct, the type-locality given by Reakirt must be in error—if not, then Hall's synonymy must be in error!]

Phyciodes ardys ardys (Hewitson); Hall, 1929: 90.

♂ forewing upperside cell-spot vestigial; hindwing upperside white discal band narrow, 1–2 mm wide, slightly sinuous, broken by black veins, series of slender submarginal lunules complete. ♀ underside hindwing white discal stripe narrow and irregular if present.

DISTRIBUTION. S. Mexico, Nicaragua, Costa Rica, Colombia.

Anthanassa ardys subota (Godman & Salvin)

(Figs 19, 233)

Phyciodes subota Godman & Salvin, 1878a: 268. LECTOTYPE ♂, GUATEMALA: Polochic Valley (Godman & Salvin) (BMNH, Type no. Rh. 8505; Gabriel, 1927: 114), here designated [examined].

Phyciodes subota Godman & Salvin; Godman & Salvin, 1882: 204, pl. 22, figs 7, 8.

Phyciodes ardys subota Godman & Salvin; Hall, 1929: 91.

Usually slightly larger in overall size than *ardys ardys*; upperside markings milk-white, slightly larger, cell-spot larger, wing bases black; hindwing upperside white discal band wider, 2 mm, veins less heavily marked, submarginal lunules absent; hindwing underside with white discal band prominent.

Genitalia. ♂ in dorsal view, posterior section of valve more elongate (single preparation).

DISTRIBUTION. Guatemala (Polochic Valley), Costa Rica.

DISCUSSION. *A. ardys subota* appears to be a constant form, and widely distributed in Guatemala. Its taxonomic position is a little uncertain as *A. ardys ardys* occurs in neighbouring countries, but an overlap of distribution has not been recorded. Hall (1929: 91) states that *A. ardys ardys* does not occur in Guatemala. The figure in Godman & Salvin (1882: pl. 22, fig. 7) is considerably enlarged (forewing 20 mm) compared with the actual specimen, now preserved in the BMNH.

Anthanassa dracaena (Felder & Felder) **comb. n.**

(Figs 20, 234–236)

Eresia dracaena Felder & Felder, 1867: 393. LECTOTYPE ♂, COLOMBIA: 'Bogota' (*Lindig*) (BMNH), here designated [examined]. [Specimen bears Felders' original ms label.]

Phyciodes dracaena (Felder & Felder); Röber, 1913: 442, pl. 90, row c [fig. 3] (underside).

Phyciodes dracaena dracaena (Felder & Felder); Hall, 1929: 100, pl. 1, fig. 11 (♂).

♂ forewing 19 mm, elongate, upperside dark brown, markings orange, like *Anthanassa drusilla* but with oblique mark before cell-end and lacking proximal orange spot in s1b; hindwing underside very pale buff, markings not well defined, basal area with irregular markings limited by broken brown discal line (most prominent on the costa), outer margin orange-brown from s5 to anal angle. ♀ similar, forewing 20 mm, markings white, hindwing upperside discal band faintly yellow.

Genitalia. ♂ like *A. drusilla*, tegumen and scaphial extension better defined, posterior border of juxta almost straight, valve apex and harpe more slender. ♀ sterigma not large, ductus lightly chitinized, bursal support large, cylindrical, a most distinctive feature, post-vaginal scutum extensive.

DISTRIBUTION. Colombia, not recorded elsewhere.

Anthanassa phlegias (Godman & Salvin) **comb. n., stat. rev.**

(Fig. 21)

Phyciodes phlegias Godman & Salvin, 1901: 680, pl. 108, figs 21, 22. LECTOTYPE ♂, HONDURAS (BMNH, ex Staudinger, ex Godman & Salvin Coll.; Type no. Rh. 8502; Gabriel, 1927: 97), here designated [examined].

Phyciodes carigia Schaus, 1902: 395. Holotype (sex ?), COLOMBIA (USNM, Type no. 5889).

Phyciodes carigia Schaus; Schaus, 1913: 346, pl. 50, fig. 9 (♀).

Phyciodes platytaenia Röber, 1913: [no text] pl. 90, row b [fig. 5] (♂). Syntype(s) ♂, [HONDURAS] (depository unknown).

Phyciodes dracaena phlegias Godman & Salvin; Hall, 1929: 100.

♂ forewing 17 mm, like *Anthanassa dracaena* but smaller, outer margin deeply excavate, upperside markings orange-fulvous as in *Anthanassa drusilla*, but wing-base dark, spot at base of space 1b present; hindwing uppermost orange discal band wide, tapering to inner margin, submarginal lunules well defined but narrow postdiscal band absent; hindwing underside discal band grey, brightly marked, expanded at outer margin, brown costal mark conspicuous.

Genitalia. Not examined.

DISTRIBUTION. Honduras (1 ♂), Costa Rica (1 ♂). A rare species.

Anthanassa texana (Edwards)

(Figs 22, 237–239)

Melitaea texana Edwards, 1863: 81.

♂ forewing 18–19 mm, outer margin deeply scalloped, upperside dark brown, markings small white spots, small spot in cell near apex, another in s2 near base; hindwing upperside white discal band narrow, crossed by dark veins, small orange spot in cell; forewing underside base orange-red; hindwing white discal band not prominent, marginal area strongly marbled in grey, light and dark brown. ♀ larger, markings similar, upperside with confused orange basal markings more prominent.

Genitalia. ♂ like *Anthanassa drusilla*, in dorsal view narrower, valve apex more slender, harpe less massive. ♀ like *A. drusilla*.

DISTRIBUTION. Southern States of U.S.A., from Arizona and Texas to N. Mexico and eastwards to Georgia and Florida.

Two subspecies with similar genitalia.

Anthanassa texana texana (Edwards)

(Figs 22, 237-239)

Melitaea texana Edwards, 1863: 81. ?Holotype ♂, U.S.A.: Texas [New Braunfels, Comal Co.] (CM, Pittsburgh) (see Brown, 1966: 421, fig. 22).

Eresia smerdis Hewitson, [1864]: [21], pl. [11], figs 33, 34. LECTOTYPE ♂, MEXICO (BMNH, type no. Rh. 8497; Gabriel, 1927: 112), here designated [examined].

[*Eresia cincta* Edwards; Scudder, 1875: 239, 268. Misidentification.]

Phyciodes texana (Edwards); Röber, 1913: 442, pl. 90, row c [fig. 5] (♂), [fig. 6] (♀).

Anthanassa texana (Edwards); Barnes & McDunnough, 1917: 10; Holland, 1947: 141, pl. 18, figs 8, 9.

Phyciodes texana texana (Edwards); Hall, 1929: 96.

Phyciodes texana (Edwards); Forbes, 1945: 178.

♂ forewing upperside wing bases brown with obscure orange markings.

DISTRIBUTION. U.S.A.: Arizona, Texas, New Mexico, Nebraska; Mexico.

Anthanassa texana seminole (Skinner)

Eresia texana seminole Skinner, 1911: 412. ♂, ♀ syntypes, U.S.A.: Bainbridge, Georgia (CM, Pittsburgh).

Anthanassa texana var. *seminole* Skinner; Holland, 1947: 141, pl. 59, fig. 14 (♂).

Differs from *A. texana texana* on upperside, bases of both wings being orange-red.

DISTRIBUTION. Only south-east U.S.A.: Florida, Georgia.

DISCUSSION. There is little information about this butterfly; its status as a subspecies needs confirmation.

Anthanassa alexon (Godman & Salvin) comb. n., stat. rev.

(Figs 23, 240)

Phyciodes alexon Godman & Salvin, 1889: 353.

Like *Anthanassa texana*, ♂ forewing 17-19 mm, upperside dark brown, markings white or yellowish; forewing underside base yellow-grey; hindwing underside with triangular, brown costal mark, other markings indistinct. ♀ larger, markings similar.

Genitalia. Like *A. ardys*, ♂ differs slightly in shape of tegumen and in bilobed scaphial extension, posterior border of juxta with central prominence. ♀ not examined.

DISTRIBUTION. Arizona, Mexico (Guerrero).

Two subspecies with similar genitalia.

Anthanassa alexon alexon (Godman & Salvin)

(Fig. 23)

Phyciodes alexon Godman & Salvin, 1889: 353. LECTOTYPE ♂, MEXICO: Cuernavaca, Morelos (*H. H. Smith*) (BMNH, type no. Rh. 8499; Gabriel, 1927: 9), here designated [examined].

Phyciodes alexon Godman & Salvin; Godman & Salvin, 1901: 681, pl. 108, figs 23-26.

? *Phyciodes natalces* Dyar, 1913a: 279. Holotype ♀, MEXICO: Rascon, San Luis Potosi (*R. Müller*) (USNM, Type no. 14487).

Phyciodes nebulosa alexon Godman & Salvin; Hall, 1929: 102.

♂ forewing 17-18 mm, upperside markings chiefly white or cream, with small, confused brown marbling at base; hindwing orange-brown markings more prominent. ♀ similar, slightly larger.

DISTRIBUTION. Mexico.

Anthanassa alexon subconcolor (Röber)

(Fig. 240)

Phyciodes subconcolor Röber, 1913: 441, pl. 90, row b [fig. 1] (♂). LECTOTYPE ♂, U.S.A.: Benson, Arizona (*O. T. Baron*) (BMNH), here designated [examined]. [Specimen bears Röber's original determination label, and a separate, pink 'type' label, ex Rothschild Coll.]

Phyciodes nebulosa subconcolor Röber; Hall, 1929: 102.

♂ forewing 19 mm, larger than *alexon alexon*, upperside yellow-brown markings more prominent and with general brown flush overall. ♀ larger, markings similar.

DISTRIBUTION. Arizona.

Anthanassa acesas (Hewitson) comb. n.

(Figs 24, 241)

Eresia acesas Hewitson, [1864]: [24], pl. [12], figs 48, 49. LECTOTYPE ♀, VENEZUELA (BMNH, Type no. Rh. 8466; Gabriel, 1927: 5), here designated [examined].

? *Phyciodes annita* Staudinger, 1885: 92, pl. 36. ♂ syntype(s), VENEZUELA: Merida (*Hahnel*) (? MNHU, Berlin).

Phyciodes acesas acesas (Hewitson); Hall, 1929: 107, pl. 1, fig. 2 (♂).

This and the following species (*A. nebulosa*) must be distinguished from species of *Telenassa* with rather similar ocellar ring markings on the upperside of the hindwings.

♂ forewing 15 mm, upperside very dark with a few indistinct or obsolescent yellowish markings in the submarginal area, otherwise unmarked; underside discal and postdiscal markings well developed as in *A. nebulosa*; hindwing upperside no basal markings, postdiscal series of yellowish lunules forming 5 rings in s1b-s5, rings completed by short striae proximal to submarginal lunules. ♀ slightly larger, upperside markings better defined.

Genitalia. ♂ like *A. ardys*, apical teeth of valve rather long, harpe slender, posterior border of juxta almost straight.

DISTRIBUTION. Venezuela.

Anthanassa nebulosa (Godman & Salvin) comb. n.

(Figs 25, 242, 243)

Phyciodes nebulosa Godman & Salvin, 1878a: 269. LECTOTYPE ♂, GUATEMALA: Las Nubes (*O. Salvin*) (BMNH, Type no. Rh. 8501; Gabriel, 1927: 85), here designated [examined].

Phyciodes castianira Godman & Salvin, 1880: 123, 131, pl. 4, fig. 10. LECTOTYPE ♂, COLOMBIA: Manaure, Sierra Nevada de Santa Marta (*F. Simons*) (BMNH, Type no. RH. 8504; Gabriel, 1927: 27), here designated [examined]. **Syn. n.**

Phyciodes nebulosa Godman & Salvin; Godman & Salvin, 1882: 205, pl. 22, figs 13, 14; Röber, 1913: 443, pl. 88, row i [fig. 7].

Phyciodes nebulosa nebulosa Godman & Salvin; Hall, 1929: 101.

♂ forewing 16-17 mm, small, upperside dark brown, markings orange-yellow, in general pattern like *A. drusilla*, postdiscal spots in s1b and s4 prominent, spot at middle of s1b present; hindwing upperside with basal striae, a narrow, inconspicuous discal band divided by dark veins, and postdiscal lunules forming a series of 5 ocelliform rings, each completed by short striae placed before the submarginal lunules. ♀ larger, 18 mm, all markings brighter, well defined, postdiscal spots joined to make a wide yellowish band.

Genitalia. ♂ like *A. acesas*.

DISTRIBUTION. N. Colombia, Guatemala.

DISCUSSION. The holotype of *A. nebulosa* is a rather dark specimen of the species later described by Godman & Salvin as *castianira*, and this name must fall as a synonym, but remains available if required.

The two forms are not truly identical. The lectotype of *nebulosa* is slightly darker on the upperside, with markings somewhat obscured by brown dusky suffusion, when compared with the original type-material of *castianira*, five males all from the Cinchicua Valley in N. Colombia.

Anthanassa argentea (Godman & Salvin) **comb. n., stat. rev.**

(Figs 26, 244)

Phyciodes argentea Godman & Salvin, 1882: 207. LECTOTYPE ♂, GUATEMALA: Choctum (*Hague*) (BMNH, Type no. Rh. 8468; Gabriel, 1927: 16), here designated [examined].

Phyciodes atronia atronia f. *argentea* Godman & Salvin; Hall, 1929: 111.

♂ forewing 16 mm, like *A. atronia*, upperside very dark, but with wide field of chestnut-brown over inner margin and discal area, pale postdiscal spots in s1b and s4 distinct, other markings more or less vestigial; hindwing upperside brown flush generally extends along inner margin; forewing underside costa and much of hindwing pale grey with fine dark striae. ♀ upperside less dark, markings yellow, spots arranged as in *A. drusilla*; hindwing underside yellow-grey with few markings.

Genitalia. ♂ like *A. ardys*, tegumen membranous and very fragile, valve apex slender in dorsal view, posterior margin of juxta straight. ♀ not examined.

DISTRIBUTION. Mexico, Guatemala, Nicaragua.

DISCUSSION. This taxon is treated by Hall as a 'form' of *A. atronia*, with the observation that both forms fly together at Orizaba in Mexico. In the short series present in the BMNH and in the Hall coll. (BM, Brighton) the distinctive markings are constant and specific rank seems to be more appropriate.

Anthanassa atronia (Bates) **comb. n.**

(Figs 27, 28, 245)

Melitaea atronia Bates, 1866: 113. LECTOTYPE ♂, GUATEMALA: Dueñas (BMNH, Type no. Rh. 8470; Gabriel, 1927: 18), here designated [examined].

? *Eeresia sydra* Reakirt, 1866b: 335. Syntype(s), MEXICO: near Vera Cruz (*W. H. Edwards*) (depository uncertain, possibly destroyed).

Eeresia obscurata Felder, 1869: 471. LECTOTYPE ♂, MEXICO: Cuernavaca (BMNH) here designated [examined].

? *Phyciodes diallus* Godman & Salvin, 1878b: 260. Syntype(s) ♀, PANAMA: Chiriqui (*Ribbe*) (MNHU).

? *Phyciodes chromis* Godman & Salvin, 1878b: 260. Syntype(s) ♀, PANAMA: Chiriqui (*Ribbe*) (MNHU).

Phyciodes cassiopea Godman & Salvin, 1878b: 262. LECTOTYPE ♀, COSTA RICA: Cache (*H. Rogers*) (BMNH, Type no. Rh. 8471; Gabriel, 1927: 27), here designated [examined].

Phyciodes diallus Godman & Salvin; Godman & Salvin, 1882: 207, pl. 22, figs 24, 25.

Phyciodes cassiopea Godman & Salvin; Godman & Salvin, 1882: 207, pl. 22, figs 22, 23; Röber, 1913: 441, pl. 90, row a [fig. 4] (♂).

Phyciodes atronia (Bates); Godman & Salvin, 1882: 206, pl. 22, figs 19–21, Forbes, 1945: 172–178.

? *Phyciodes albofascia* Röber, 1913: 441, pl. 90, row b [fig. 6] (♀, as *albifascia*). Syntype(s) ♀, GUATEMALA (depository unknown).

Phyciodes atronia atronia (Bates); Hall, 1929: 109.

Phyciodes atronia diallus Godman & Salvin; Hall, 1929: 111.

♂ forewing 17 mm, upperside very dark brown, markings paler brown, usually obscure, small white or yellowish postdiscal spots in s1b and s4 always present on both surfaces; hindwing upperside costal area dark brown, unmarked; forewing underside medium brown, discal and postdiscal markings very obscure or absent. ♀ forewing 19–21 mm, larger, markings variable, in a pattern like *A. drusilla*, yellowish (nominotypical form) or white (♀-forms *cassiopea*, *albofascia*). In ♀-form *diallus* markings white, costal bar and postdiscal spots united to form a prominent fascia, recorded by Hall as a constant form at Chiriqui.

Genitalia. ♂ like *A. ardys*, posterior margin of juxta straight in dorsal view, penis slender. ♀ not examined.

DISTRIBUTION. Mexico, Guatemala, Costa Rica, Nicaragua, Panama.

DISCUSSION. The ♀-form *chromis* is included here with reserve. It is not figured and the type-material has not been examined. Described from one or more specimens in the Staudinger Coll., perhaps similar to ♀-form *diallus*.

Anthanassa otanes (Hewitson) **comb. n.**

(Figs 29, 30, 246)

Eresia otanes Hewitson, [1864]: [24], pl. [12], fig. 47.

♂ forewing 18 mm, upperside dark brown with or without small yellow markings in the general pattern of *A. drusilla*; hindwing leaden blue, unmarked except for a narrow black marginal border; hindwing underside marbled brown and yellow, brown mark at apex of costa prominent. ♀ larger, upperside markings more complete.

Genitalia. ♂ tegumen and scaphial extension well defined, lateral walls partly chitinized, posterior border of juxta sinuous with central boss, posterior section of valve rather long, harpe stout, penis slender. ♀ not examined.

DISTRIBUTION. Mexico, Guatemala, Costa Rica.

Two subspecies with similar genitalia.

Anthanassa otanes otanes (Hewitson)

(Figs 29, 30)

Eresia otanes Hewitson, [1864]: [24], pl. [12], fig. 47. LECTOTYPE ♂, GUATEMALA (*O. Salvin*) (BMNH, Type no. Rh. 8473; Gabriel, 1927: 91), here designated [examined].

Phyciodes otanes (Hewitson) Godman & Salvin, 1882: 208, pl. 22, figs 28, 29.*Phyciodes otanes otanes* (Hewitson); Hall, 1929: 112.

♂ upperside very dark, markings vestigial if present. ♀ larger, upperside markings complete, white or shaded brown, in general pattern as *A. drusilla*.

DISTRIBUTION. Guatemala, only in western areas (Hall).

Anthanassa otanes sopolis (Godman & Salvin)

Phyciodes sopolis Godman & Salvin, 1878b: 262; Godman & Salvin, 1882: 209, pl. 22, figs 30–32. LECTOTYPE ♂, GUATEMALA: Vera Paz, Choctum (*Hague*) (BMNH, Type no. Rh. 8474; Gabriel, 1927: 112), here designated [examined].

Phyciodes cyno Godman & Salvin, 1889: 354; Godman & Salvin, 1901: 680, pl. 108, figs 27–30. Holotype ♂, MEXICO: Orizaba (*H. J. Elwes*) (BMNH, Type no. Rh. 8472; Gabriel, 1927: 37), [examined]. **Syn. n.**

Phyciodes dora Schaus, 1913: 345, pl. 51, fig. 9; Hall, 1929: 122; Forbes, 1945: 174. Syntype(s) ♀, COSTA RICA: Poas (? USNM). **Syn. n.**

Phyciodes otanes sopolis Godman & Salvin; Hall, 1929: 113.*Phyciodes otanes cyno* Godman & Salvin; Hall, 1929: 114.

♂ forewing like *otanes otanes*, but upperside yellow markings complete, discal macules sometimes enlarged (f. *cyno*). ♀ upperside markings well developed as in *A. drusilla*, forewing markings yellow (*sopolis*) or white (*cyno*), clearly quite variable. The form *dora* is probably a florid modification of *sopolis*.

Genitalia. ♂ like *otanes otanes*. ♀ not examined.

DISTRIBUTION. Guatemala (in eastern regions), Mexico, Costa Rica.

DISCUSSION. All forms of this species are rare and material available is scanty. It is probably that *otanes* and *sopolis* represent parts of a cline.

Anthanassa annulata sp. n.

(Figs 31, 247, 248)

♂ forewing 15 mm, apex truncate, upperside dark brown, markings like *A. otanes*, small yellow spots, cell spot small, narrow oblique postdiscal mark in s4–s6, spot at base of s2 prominent, extending into s1b and s3, small round spots in s1b and s4 proximal to scanty vestigial submarginal markings, fringes chequered, brown and white; hindwing upperside dark brown, base unmarked, vestigial stria on discoidal veins, discal and postdiscal lunules joined to form circles in s1b–s3, narrow submarginal lunules in complete series from s1b–s7, fringes chequered. Underside forewing markings as above but paler buff

and orange-brown mark present on outer margin; hindwing grey with confused brown striae, conspicuous brown mark on costa and along outer margin to s4. ♀ similar, larger.

Genitalia. ♂ tegumen very fragile, membranes, bilobed, unfortunately distorted in preparation, posterior border of juxta concave, saccus small, posterior section of valve short, stout, harpes massive. There is marked similarity to the organs of *A. crithona*.

Holotype ♂, **Ecuador**: Paramba, 3500 ft [1160 m], iv. 1897 (*Rosenberg*) (genitalia slide no. 1351) (BMNH). Paratypes. **Colombia**: 2 ♂, Rio Dagan, (*Rosenberg*). **Ecuador**: 2 ♂, 1 ♀, Cachabé, low country, 1897 (*Rosenberg*). (All in BMNH.)

DISTRIBUTION. Ecuador and Colombia.

Anthanassa crithona (Salvin) **comb. n.**

(Figs 32, 249–251)

Melitaea crithona Salvin, 1871: 415. LECTOTYPE ♂, PANAMA: Chiriqui (*Arcé*) (BMNH, Type no. Rh. 8477; Gabriel, 1927: 36), here designated [examined].

Phyciodes crithona (Salvin) Godman & Salvin, 1882: 206, pl. 22, figs 17, 18; Röber, 1913: pl. 89, row k [figs 2–4]; Hall, 1929: 127.

♂ forewing 17 mm, upperside dark, prominent postdiscal band yellow; hindwing dark with yellow striae in discal, postdiscal and submarginal series. ♀ forewing 24 mm, upperside markings paler and extended.

Genitalia. ♂ in dorsal view short, wide, valve apex conical, harpe massive, posterior border of juxta slightly concave. ♀ ductus short, bursal support well defined.

DISTRIBUTION. Nicaragua, Costa Rica, Panama.

Anthanassa fulviplaga (Butler) **comb. n., stat. rev.**

(Figs 33, 252–254)

Phyciodes fulviplaga Butler, 1872: 77; Butler, 1874: 183, pl. 63, fig. 2; Godman & Salvin, 1882: 208, pl. 22, figs 26, 27; Röber, 1913: 441, pl. 90, row a [figs 2, 3]; Hall, 1929: 114. LECTOTYPE ♂, COSTA RICA: Cartago (*van Patten*) (BMNH, Type no. Rh. 8476; Gabriel, 1927: 53), here designated [examined].

Phyciodes crithona stenotaenia Röber, 1913: 440, pl. 89, row k [fig. 8]. Holotype ♀, COSTA RICA: Juan Vinas (BMNH) [examined].

Phyciodes otaenes fulviplaga Butler; Forbes, 1945: 175, 190.

♂ forewing 16 mm, upperside brown with large costal mark orange-yellow and small yellow spots in postdiscal area; hindwing leaden-grey with yellow submarginal lunules in series. ♀ forewing 21 mm, upperside markings more extensive.

Genitalia. ♂ tegumen membranes in dorsal view, posterior border or juxta with central prominence, apical section of valve short, harpe very massive; penis apex slender. ♀ ductus partly chitinized, bursal support not well defined.

DISTRIBUTION. Costa Rica, Panama.

Anthanassa hermas (Hewitson) **comb. n., stat. rev.**

(Figs 34, 255–257)

Eresia hermas Hewitson, [1864]: [21], pl. [11], fig. 32. LECTOTYPE ♂, BRAZIL: Recife, Pernambuco, (*Mrs G. Smith*) (BMNH), Type no. Rh. 8515; Gabriel, 1927: 59), here designated [examined].

Eresia conferta Felder & Felder, 1867: 394. LECTOTYPE ♀, BRAZIL: Bahia, *Luschnath* (BMNH), here designated [examined]. [Bears Felders' original M/S label *E. conferta* Feld.]

? *Phyciodes brancodia* Schaus, 1902: 394. Holotype ♂, BRAZIL: São Paulo (USNM, type no. 5887).

Phyciodes aequatorialis Röber, 1913: 442, pl. 90, row c [fig. 4] (? ♀). Syntype(s), ECUADOR (depository unknown).

? *Phyciodes aequatorialis gisela* Röber, 1913: 442. Syntype(s), BRAZIL: Mato Grosso (depository unknown).

Phyciodes conferta (Felder & Felder) Röber, 1913: 443, pl. 90, row d [fig. 8] (♂).

Phyciodes hermas (Hewitson) Hall, 1929: 98.

Phyciodes (Eresia) frisia hermas (Hewitson); Forbes, 1945: 156, 172, 189.

Phyciodes frisia hermas (Hewitson); Hayward, 1964b: 330, pl. 18, fig. 14 (♂).

♂ forewing 16 mm, upperside markings small white spots on dark brown ground-colour; ♀ similar, usually larger. In both sexes upperside of forewings 2 pairs of prominent white spots form a distinctive specific character (Hall).

Genitalia. ♂ in dorsal view tegumen wide, scaphial extension very short, lateral walls minutely toothed, posterior border of juxta convex, valve apical teeth blunt, saccus massive; penis slender. ♀ ductus partly chitinized, bursal support not well defined.

DISTRIBUTION. Brazil, Paraguay, N. Argentina, ? Ecuador.

Anthanassa frisia (Poey) **comb. rev.**

(Figs 35, 258–260)

Melitaea frisia Poey, 1832: [9], pl. [2], figs (♂, ♀). Syntype(s) ♂, ♀, CUBA (depository unknown).

Eresia gyges Hewitson, [1864]: [24], pl. [12], figs 45, 46. LECTOTYPE ♂, JAMAICA (BMNH, Type no.

Rh. 8498; Gabriel, 1927: 56), here designated [examined].

Eresia frisia (Poey); Hewitson, [1866]: iv (corrections).

Phyciodes frisia frisia (Poey); Hall, 1929: 83.

Phyciodes (Eresia) frisia frisia (Poey); Forbes, 1945: 156; Bauer, 1975: 142, pl. 44, fig. 16.

Phyciodes (eresia) frisia gyges (Hewitson); Forbes, 1945: 157.

Anthanassa frisia (Poey); Holland, 1947: 140, pl. 17, fig. 42.

Phyciodes frisia (Poey); Riley, 1975: 79, pl. 6, fig. 12 (♂).

♂ forewing 15–16 mm, variable, upperside brown, markings orange-yellow, spot near anal in s1b prominent, usually with minute spot above it in s2; hindwing upperside prediscal band wide at costa, tapering gradually to vc. ♀ similar, often larger.

Genitalia. ♀ tegumen large, scaphial extension short, lateral walls toothed, posterior border of juxta curved; penis in side view slender. ♀: short ductus partly chitinized, bursal support defined.

DISTRIBUTION. Cuba, Trinidad, Jamaica, Hispaniola, Puerto Rico, Bahamas, and probably on other islands, and U.S.A. (Texas, Florida: Key West).

Anthanassa tulcis (Bates)

(Figs 36, 261–263)

Melitaea tulcis Bates, 1864a: 82. LECTOTYPE ♂, GUATEMALA: Central Valleys (BMNH, Type no. Rh. 8513; Gabriel, 1927: 120), here designated [examined].

? *Eresia archesilea* Felder, 1869: 471. Syntypes ♂, ♀ MEXICO: Cordoba (*Hedemann*) (? NM, Vienna).

Eresia punctata Edwards, 1871c: 191. Holotype ♂, [MEXICO]: 'S. Arizona' (*Palmer*) (CM, Pittsburgh). [See Brown, 1966: 424, fig. 23.]

Phyciodes tulcis (Bates); Röber, 1913: 441, pl. 90, row b [fig. 8] (♂).

Phyciodes frisia tulcis (Bates); Hall, 1929: 84.

Phyciodes (Eresia) frisia tulcis (Bates); Forbes, 1945: 156; Bauer, 1975: 142, pl. 44, fig. 19.

Anthanassa tulcis (Bates); Holland, 1947: 141, pl. 17, fig. 39.

♂ forewing 14 mm, small but variable, like *A. frisia*, upperside dark grey-brown, markings very pale, yellowish; hindwing upperside prediscal band very small or absent, postdiscal line absent, pale discal band relatively wide, prominent. ♀ similar, larger.

Genitalia. ♂ like *frisia*, in dorsal view scaphial extension wider, lateral teeth small, more numerous, posterior border of juxta more convex, slightly irregular with low central bulge. ♀ bursal duct short, partly chitinized, support oval.

DISTRIBUTION. From U.S.A. (Texas), Mexico and Guatemala through Central America to Panama.

Anthanassa dubia (Hall) comb. n., stat. n.

(Figs 37, 264)

[*Phyciodes frisia* (Poey); Godman & Salvin, 1882: pl. 22, fig. 6; Röber, 1913: pl. 89, row e [fig. 6] (♂).
Misidentifications.]

Phyciodes frisia dubia Hall, 1929: 85. Holotype ♂, VENEZUELA: San Esteban, Puerto Cabello, ex *Hahnel* (BMNH; note: there may be a 'false type' of this taxon in BM, Brighton) [examined].

Phyciodes (Eresia) frisia dubia Hall; Forbes, 1945: 156.

♂ forewing 13–15 mm, like *A. tulcis* but upperside ground-colour brown, markings yellow, hindwing upperside prediscal band present but short, extending to v5, discal band relatively wide, postdiscal markings present. ♀ similar, larger.

Genitalia. Like *A. frisia*.

DISTRIBUTION. Venezuela and coastal districts of Colombia.

Anthanassa taeniata (Röber) comb. n., stat. rev.

(Figs 38, 265)

Phyciodes taeniata Röber, 1913: 438, pl. 89, row h [figs 3, 4] (♂, ♀). ♂, ♀ Syntypes ♂, ♀, PERU: Tarapoto (depository unknown).

Phyciodes frisia taeniata Röber, Hall, 1929: 85.

Phyciodes (Eresia) frisia taeniata Röber; Forbes, 1945: 156.

♂ forewing 16–17 mm, upperside brown, markings bright fulvous, like *frisia* but with additional spot in s2 near anal angle; hindwing upperside prediscal band well developed, extending to v2, discal band, postdiscal line and submarginal lunules all present in complete series. ♀ similar, slightly larger.

Genitalia. Like *A. frisia* but wider, lateral shoulders better marked, scaphial extension slightly narrower, dentate borders almost horizontal with larger teeth, saccus enlarged, posterior section of valve shorter, posterior border of juxta straight. ♀ not examined.

DISTRIBUTION. Ecuador, W. Peru. Distribution probably restricted to this area.

DISCUSSION. The four preceding species are clearly closely related and might be grouped as subspecies (following Hall). I find this treatment not really satisfactory since the different phenotypes are so well marked and easily distinguished, and intermediates have not been found in the extensive series in the BMNH. Each form appears to be vicarious and allopatric. The presence of two forms flying in the same district would confirm specific separation, but so far this has not been recorded.

Anthanassa sosis (Godman & Salvin) comb. n.

(Figs 39, 266)

Phyciodes sosis Godman & Salvin, 1878b: 262; Godman & Salvin, 1882: 204, pl. 22, figs 11, 12; Röber, 1913: 442, pl. 90, row d [fig. 1] (♂); Hall, 1929: 95; Forbes, 1945: 178. LECTOTYPE ♂, COSTA RICA: Irazu, 6000–7000 ft [2000–2300 m] (*H. Rogers*) (BMNH, Type no. Rh. 8482; Gabriel, 1927: 112), here designated [examined].

♂ forewing 16–17 mm, upperside black, markings small, yellow, spots arranged as in *A. otales sopolis*; hindwing upperside with 3 series of white or yellowish lunules parallel with the outer margin, hindwing underside marbled in shades of brown and grey. ♀ larger, markings extended.

Genitalia. ♂ tegumen short, firmly chitinized, scaphial extension well defined, saccus narrow but deep, valve in dorsal view shows 3 strong apical teeth, harpe slender, slightly sinuous. ♀ not examined.

DISTRIBUTION. Costa Rica, Panama, Colombia.

Anthanassa drymaea (Godman & Salvin) **comb. n.**

(Figs 40–267)

Phyciodes drymaea Godman & Salvin, 1878a: 268; Godman & Salvin, 1882: 205, pl. 22, figs 9, 10; Röber, 1913: 442, pl. 90, row c [fig. 7] (♂); Hall, 1929: 93; Forbes, 1945: 177–178. LECTOTYPE ♂, GUATEMALA: hacienda Las Nubes (*O. Salvin*) (BMNH, Type no. Rh. 8481; Gabriel, 1927: 42), here designated [examined].

♀ forewing 16–17 mm, like *A. ardys*, upperside dark brown (? black when fresh) with small white markings; forewing underside base grey-brown; hindwing upperside with curved discal series of 5 very small white spots; underside brown marbled with grey, with darker costal mark. ♀ slightly larger, hindwing underside markings paler.

Genitalia. ♂ organs narrow, elongate, tegumen chitinized, lateral walls gently concave, scaphial extension very short, saccus conspicuously narrow, cleft short, valve apex with 3 teeth, one very long directed medially, harpe short, slightly curved with a small, ventral tooth; penis slender.

DISTRIBUTION. Guatemala. Recorded at altitudes of 4000–7000 ft [1460–2560 m] at Calderas, Purula, Las Nubes, etc.

NOTE. Can be distinguished from *A. ardys* (p. 98) by the very small, widely separated white discal spots on hindwing upperside.

Anthanassa sitalces (Godman & Salvin) **comb. n.**

(Figs 41, 268)

Phyciodes sitalces Godman & Salvin, 1882: 201, pl. 21, figs 30, 31; Röber, 1913: 442, pl. 88, row i [fig. 5]; Hall, 1929: 95. LECTOTYPE ♂, GUATEMALA: Chilasco (*G. C. Champion*) (BMNH, Type no. Rh. 8489; Gabriel, 1927: 111), here designated [examined].

Phyciodes sitalces saltator Hall, 1929: 96. Holotype ♂, MEXICO: Guerrero, Omilteme, July, 8000 ft [2600 m] (*H. Smith*) (BMNH) [examined]. **Syn. n.**

♂ forewing 19–20 mm, like *A. drymaea* but larger; upperside dark brown (? black when fresh), markings small white spots; hindwing upperside postdiscal white spots very small, the series strongly curved, forewing underside base bright orange-brown. ♀ similar, slightly larger.

Genitalia. ♂ like *A. drymaea* but less elongate, saccus wider, apical horizontal tooth of valve shorter, curved downwards, harpe with 2 or 3 basal teeth below. ♀ not examined.

DISTRIBUTION. Guatemala, Mexico. Flies at 6000–8000 ft [2000–2600 m] in mountains.

Anthanassa cortes (Hall) **comb. n.**

(Figs 42, 269)

Phyciodes cortes Hall, 1917: 161. Lectotype ♂, MEXICO: Cuautla, 4000 ft [1300 m] June–July (*A. Hall*) (BM, Brighton), designated by Hall, 1929: 93 [examined].

♂ forewing 18–19 mm, upperside like *A. ardys* etc., but white spots are slightly larger and well defined; hindwing upperside white postdiscal spots in series all well separated, unlike *A. ardys* in which the white band is only divided by the intersection of black veins. ♀ upperside ground-colour paler, grey-brown, markings larger, underside forewing bases orange-brown.

Genitalia. ♂ like *A. sitalces*, in dorsal view the teeth below the base of harpe less prominent.

DISTRIBUTION. SW. Mexico. The type—series of 11 ♂, 1 ♀ were all taken by Hall near Cuautla. I have not seen or heard of other material.

DISCUSSION. The species *A. sosis*, *A. drymaea*, *A. sitalces* and *A. cortes* form an interesting and clearly related group, indicated by the presence of elaborate teeth at the apices of the valves. All appear to be rare, three of them being represented in the BMNH by short series, while *A. sitalces* is known only from the original series. The taxonomic position of *A. cortes* is uncertain; possibly it is better graded as a subspecies with *A. sitalces*, but the difference in external characters is most definite.

DAGON gen. n.

Type-species: *Eresia catula* Hopffer. Gender: masculine.

Small butterflies, forewing 13–15 mm, outer margin straight; hindwing outer margin slightly wavy; in all species upperside dark brown or black with small white or yellow markings; underside markings more variable, hindwing with small ocellar postdiscal spots in s1c–s6. Sexes similar.

Genitalia. ♂ organs narrow, elongate, tegumen well defined, posterior border of juxta convex, saccus prominent, elongate, broad, widest at its apex which is broadly notched, subapical tooth present before valve apex; penis slender, ostium-kneel absent (*D. catula* and *D. pusillus*).

DISTRIBUTION. NW. Argentina (Salta), S. Peru, Bolivia.

DISCUSSION. The four small butterflies included in this genus form an interesting group, the males being distinguished at once by their narrow, elongate genitalia which are similar in all species. The sharply pointed twin teeth at the apices of the valves, and the slender penes, suggest relationship with *Anthanassa*, but this is not confirmed by the shapes of the wings (the forewings with straight outer margins), the pattern of wing markings, and especially by the long, wide saccus, with no more than a shallow terminal notch. Only a single specimen is known of the little species *fontus*, and the genitalia have not been examined, but judging by the external characters it probably belongs to this genus.

Forbes (1945) keys out three of the species as his group 13; the fourth species (*morenus*) he includes in his key to combined groups 11 and 15.

NOTE. The mythological Dagon was like a mermaid—‘upwards man and downwards fish’. The name is proposed with allusion to the extraordinary development of the saccus, shaped like the tail of a fish, in this small and obscure genus.

Key to species of *Dagon* (based on Forbes, 1945)

- | | | |
|---|--------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1 | Upperside forewing dark brown, almost unmarked except for traces of submarginal lunules | <i>morenus</i> (p. 109) |
| – | Dark upperside forewing with small yellowish white discal spots | 2 |
| 2 | Spot in hindwing cell s1b isolated, in line with postmedian band, the spot in s2 offset outward | <i>catula</i> (p. 109) |
| – | Hindwing pattern not as above | 3 |
| 3 | Postmedian spots in hindwing cells s2 and s1b in line, that in cell s3 offset outward | <i>pusillus</i> (p. 108) |
| – | Postmedian spots in cells s1b–s3 all in line, that in s4 offset outward; underside much paler, yellowish | <i>fontus</i> (p. 109) |

***Dagon pusillus* (Salvin) comb. n.**

(Figs 43, 270, 271)

Eresia pusilla Salvin, 1869: 172. LECTOTYPE ♂, PERU: Cosnipata Valley (*H. Whitely*) (BMNH, Type no. Rh 8533; Gabriel, 1927: 101), here designated [examined].

Eresia calena Hopffer, 1874: 350. Syntypes ♂, PERU: Chanchamayo (*Thamm*) (? MNHU, Berlin).

Eresia adoxa Erschoff, 1874: 142, pl. 3, fig. 5. Syntypes ♂, PERU: near Monterico (? ZI, Leningrad).

Phyciodes calena (Hopffer) Röber, 1913: 445, pl. 90, row g [fig. 2] (♂).

Phyciodes pusilla (Salvin) Hall, 1929: 118.

Phyciodes (Tritanassa) pusilla (Salvin); Forbes, 1945: 186, 190.

♂ forewing rather elongate, hindwing upperside discal white stripe narrow, postdiscal and submarginal markings vestigial, if present.

Genitalia. ♂ in dorsal view with tegumen short, fragile, posterior margin of juxta strongly convex, saccus elongate, valve apex short, stout, harpe relatively massive; penis slender. ♀ not available.

DISTRIBUTION. Peru, Bolivia.

Dagon catula (Hopffer) comb. n.

(Figs 44, 272, 273)

Eresia catula Hopffer, 1874: 350. Holotype ♂, 'BOLIVIA' (Warscewicz) (? MNHU, Berlin) [not examined; see note below].

Phyciodes catula (Hopffer) Röber, 1913: 445, pl. 90, row g [fig. 4].

Phyciodes minima Röber, 1913: 445, pl. 90, row g [fig. 3]. Syntype(s), ARGENTINA: Salta (depository unknown). Syn. n.

Phyciodes catula extincta Röber, 1913: 445, pl. 90, row g [fig. 5]. Syntype(s), PERU (? MNHU, Berlin). Syn. n.

Phyciodes abasina Staudinger (*in litt.*); Röber, 1913: 445 (invalid: proposed in synonymy with *catula*).

Phyciodes birivula Dyar, 1913b: 632. Holotype ♂, PERU: San Miguel, 6000 ft [2000 m] (USNM, Washington). Syn. n.

Phyciodes catula catula ab. *fulvocincta* Hall, 1929: 117. Holotype ♀, PERU/BOLIVIA boundary (BMNH) [examined].

Phyciodes catula catula (Hopffer); Hall, 1929: 117; Forbes, 1945: 187.

Phyciodes catula birivula Dyar; Hall, 1929: 118; Forbes, 1945: 186.

Phyciodes catula minima Röber; Hall, 1929: 118; Forbes, 1945: 186.

Phyciodes catagraphus Hayward, 1933: 214, 2 figs. Holotype ♀, ARGENTINA: Rosario de la Frontera (A. Breyer) (? IML, Tucumán). [Placed by Hayward, 1949: 12, as synonym of *P. teletusa signata*.] Syn. n.

♂ forewing 15 mm, like *D. pusillus* but broader (less elongate), upperside black, markings small, white or yellow; hindwing upperside postdiscal and submarginal markings present. ♀ larger, similar to ♂ but ground-colour variable, white to orange-brown (rare).

Genitalia. ♂ in dorsal view like *D. pusillus* but valve apex more slender, lower (apical) tooth long, sharply curved inwards, harpe slender, undulant, tegumen defined but fragile, short, posterior margin of juxta strongly convex, saccus long, wide; penis slender. ♀ not examined.

DISTRIBUTION. Peru, Bolivia, W. Argentina.

NOTE. According to Prof. K. S. Brown (*in litt.*) the Warscewicz material probably came from W. Colombia, not Bolivia; clearly it is important to examine the holotype of *catula* at the first opportunity.

Dagon morenus (Röber) comb. n.

(Figs 45, 274)

Phyciodes morena Röber, 1913: 443, pl. 90, row d [fig. 7]; Hall, 1929: 126, pl. 2, fig. 3; Forbes, 1945: 180. syntype(s) ♂, PERU: Cuzco (MNHU, Berlin).

♂ forewing 15 mm, upperside dark brown, almost unmarked, both wings with traces of submarginal lunules, hindwing with obscure, yellowish postdiscal ocelli. ♀ unknown.

Genitalia. ♂ organs like *D. catula*, apparently without individual specific characters.

DISTRIBUTION. Peru, Cuzco Province.

NOTE. There are 2 ♂ in the BMNH and 3 ♂ in coll. Hall (BM, Brighton), one of which has been dissected to make the preparation shown in the genitalia figure.

Dagon fontus (Hall) comb. n.

(Fig. 46)

Phyciodes fontus Hall, 1928a: 11; Hall, 1929: 75, pl. 2, fig. 2. Holotype ♂, GUYANA (BMNH) [examined].

Phyciodes (Tritanassa) fontus Hall; Forbes, 1945: 186, 190.

♂ forewing 14 mm, narrow, upperside black, markings yellowish white, several small discal spots as in *D. pusillus*, with suggestion also of a pale costal bar and an isolated small postdiscal spot in s5; hindwing upperside black, pale discal band narrow; underside general colour scheme pale brown, markings yellowish.

Genitalia. Not examined, abdomen missing.

DISTRIBUTION. The single known specimen is labelled 'British Guyana'.

TELENASSA gen. n.

Type-species: *Argynnis teletusa* Godart. Gender: feminine.

Rather small butterflies, outer margin of forewing excavate or entire, upperside usually with well-developed subapical bar; hindwing upperside usually with 3 rows of lunules parallel to outer margin, underside markings variable. Sexes similar or nearly so. Specific characters well marked.

Genitalia. ♂ in dorsal view with tegumen short, fragile; posterior border of juxta often with central prominence, valve long, narrow, apex curved inwards to terminate in a single point; saccus deeply cleft; penis straight, robust, distal section short, about one-third total length or little more, morula prominent but ostium-keel not developed. ♀ genitalia with ductus very short, bursal support cup-shaped.

DISTRIBUTION. The species occur over an extensive area in tropical South America, northwards to Colombia, but apparently absent from Central America.

NOTE. Of the species of *Telenassa* represented in the BMNH, eight lack females, although in some cases the males appear to be common.

Key to species of *Telenassa*

Note. It has not been practicable to include *T. burchelli* (p. 111) in this key.

- | | | |
|----|-------------------------------------------------------------------------------------------------|-----------------------------|
| 1 | Forewing upperside with orange markings | 2 |
| - | Forewing upperside without orange markings | 5 |
| 2 | Forewing orange subapical band wide, entire | 3 |
| - | Forewing not so marked | 4 |
| 3 | Hindwing orange submarginal lunules vestigial | <i>jana</i> (p. 112) |
| - | Hindwing orange submarginal lunules developed | <i>elaphina</i> (p. 113) |
| 4 | Forewing subapical band broken | <i>trimaculata</i> (p. 114) |
| - | Forewing discal band broken | <i>delphia</i> (p. 115) |
| 5 | Hindwing with orange discal band | 6 |
| - | Hindwing without discal band | 8 |
| 6 | Forewing with cell-spot well developed | <i>signata</i> (p. 112) |
| - | Forewing with cell-spot vestigial or absent | 7 |
| 7 | Forewing upperside postdiscal spot in s1, s2, s3 small, not extending to inner margin | <i>berenice</i> (p. 111) |
| - | Forewing upperside postdiscal spot in s1, s2, s3 large, extending to inner margin | 9 |
| 8 | Forewing upperside with proximal border of postdiscal spot vertical to inner margin | <i>teletusa</i> (p. 111) |
| - | Forewing upperside markings white | 10 |
| - | Forewing upperside lacking white markings | 12 |
| 10 | Forewing with white subapical band | <i>nana</i> (p. 113) |
| - | Forewing not so marked | 11 |
| 11 | Forewing with white submarginal spot in s3, but lacking subapical band; hindwing dark | <i>nussia</i> (p. 113) |
| - | Forewing not so marked, hindwing with white discal band | <i>abas</i> (p. 112) |
| 12 | Forewing apex truncate | <i>sepulta</i> (p. 115) |
| - | Forewing apex not truncate | 13 |
| 13 | Forewing underside crossed by 4 or 5 dark lines | <i>catenaria</i> (p. 114) |
| - | Forewing not so marked | 14 |
| 14 | Hindwing upperside with wide yellowish discal band | <i>flavocincta</i> (p. 114) |
| - | Hindwing not so marked | 15 |
| 15 | Forewing underside with 2 dark postdiscal bands | <i>gaujoni</i> (p. 114) |
| - | Forewing underside postdiscal area dark, bands not defined | <i>notus</i> (p. 113) |

Telenassa teletusa (Godart) **comb. n.**

(Figs 47, 275–277)

Argynnis teletusa Godart, [1824]: 817. Syntype(s), BRAZIL (depository unknown).*Phyciodes teletusa teletusa* (Godart); Hall, 1929: 76.*Phyciodes (Tritanassa) teletusa* (Godart); Forbes, 1945: 183–184, 190.? *Phyciodes teletusa douglasi* Bryk, 1953: 87. Holotype ♂, PERU: Roque (NR, Stockholm).*Phyciodes teletusa* (Godart); Hayward, 1964b: 350, pl. 18, fig. 15.

Upperside dark brown (? black when fresh), markings deep yellow; ♂ forewing 16–18 mm, an erect postdiscal mark in s1, s2, s3, extends from middle of inner margin to v3, the proximal border vertical to inner margin; transverse band of hindwing 3–4 mm wide, often tapering slightly and shading to white at inner margin. ♀ similar, often larger and markings slightly paler, forewing usually with obscure pale mark at cell-end.

Genitalia. ♂ in dorsal view: posterior border of juxta straight with a small central prominence, all generic characters well developed. ♀ chitinized bursal duct short, bursal support well defined.

DISTRIBUTION. Central and S. Brazil, Peru.

Telenassa burchelli (Moulton) **comb. n., stat. rev.**

(Figs 49, 278, 279)

Phyciodes burchelli Moulton, 1909: 100. Holotype ♂, BRAZIL: Meiaponte to S. Joaquim (*Joaq. Alves/W. J. Burchell*) (UM, Oxford, Type no. 1108) [examined].*Phyciodes teletusa* (Godart); Röber, 1913: pl. 89, row h [fig. 5] (♂). Misidentification.]*Phyciodes teletusa peruana* Röber, 1913: 438, pl. 89, row h [fig. 7]. Syntype(s) ♂, PERU (depository unknown).*Phyciodes teletusa burchelli* Moulton; Hall, 1929: 78; Forbes, 1945: 182–183.

♂ forewing 15–16 mm, narrow, outer margin straight, upperside markings yellow, like *T. teletusa*, usually smaller, postdiscal mark in s1, s2 and s3, proximal border oblique, obscure spot at cell-end often present; hindwing upperside transverse band wide, usually extending to postdiscal area. ♀ similar, larger.

Genitalia. Like *T. teletusa*.

DISTRIBUTION. Brazil, in Dept. Goiás and westwards through Mato Grosso to Peru. Recorded from Bolivia and Ecuador.

DISCUSSION. Hall records this species flying at low altitudes in the Amazon valleys, while *T. berenice* was present at high altitudes, not below 1,100 m (but see also Forbes, 1945: 183). *T. burchelli* shows little variation in the series of 49 ♂, 2 ♀ in the BMNH in spite of its wide distribution.

Telenassa berenice (Felder & Felder) **comb. n., stat. rev.**

(Figs 48, 280, 281)

Eresia berenice Felder & Felder, 1862a: 110. LECTOTYPE (♀?), PERU: 'Rio Negro' (BMNH), here designated [examined]. [Specimen bears Felders' M/S determination label.]*Phyciodes berenice* (Felder & Felder) Röber, 1913: 438, pl. 89, row i [fig. 1] (♂).? *Phyciodes drusinilla* Röber, 1913: 441, pl. 90, row a [fig. 8]; Hayward, 1964b: 337. Syntype(s) ♂, ARGENTINA (depository unknown).*Phyciodes teletusa berenice* (Felder & Felder); Hall, 1929: 78; Forbes, 1945: 182–184.

♂ forewing 16 mm, upperside dark brown, basal area unmarked, postdiscal area markings yellow like *T. teletusa* but small, costal bar short, postdiscal mark in s2 not large, usually extends into s1b and s3, but not reaching inner margin, small submarginal marks in s3 and in s4 present; hindwing upperside transverse band narrow, 2 mm or less, thin postdiscal line and submarginal lunules present. ♀ similar.

Genitalia. Like *T. teletusa*, perhaps a little wider; tegumen and scaphial extension differ, the latter less well defined, bilobed. ♀ not examined.

DISTRIBUTION. Peru (Dept. Amazonas), Ecuador, Bolivia?, Argentina?.

Telenassa signata (Hall) comb. n., stat. n.

(Figs 50, 282)

Phyciodes teletusa signata Hall, 1928a: 11; Hall, 1929: 77; Forbes, 1945: 182; Hayward, 1949: 12; 1964b: 352, pl. 18, fig. 16 (♂). Holotype ♂, ARGENTINA: Salta, Sierra de Aconquija, 3300 ft [1200 m] (BM, Brighton) [examined].

♂ forewing 15–16 mm, like *T. teletusa* but upperside markings slightly reduced, paler yellow; forewing with oblique prominent yellow mark at cell-end; hindwing yellow discal band narrow, not tapered at inner margin; hindwing underside pale yellow-buff, markings faint, lacking dark clouding along outer margin in s2–s5. ♀ not seen.

Genitalia. ♂ like *T. teletusa* but wider in dorsal view, tegumen shorter, posterior section of valve slender.

DISTRIBUTION. Argentina (Jujuy, Salta, Catamarca), Bolivia (Cochabamba).

NOTE. For distinction from *Ortilia sejona*, see p. 118.

Telenassa abas (Hewitson) comb. n.

(Figs 51, 283, 284)

Eresia abas Hewitson, [1864]: [22], pl. [11], figs 37, 38. LECTOTYPE ♂, COLOMBIA: New Grenada, Bogota (BMNH, Type no. Rh. 8512; Gabriel, 1927: 5), here designated [examined].

Phyciodes abas (Hewitson) Röber, 1913: 443, pl. 90, row e [figs 6, 7]; Hall, 1929: 115.

Phyciodes (Eresia) abas (Hewitson); Forbes, 1945: 160–161, 189.

♂ forewing 18 mm, outer margin very slightly excavate, upperside markings white, cell-spot often slightly elongate, placed a little before the disco-cellular vein; hindwing upperside discal band 2–3 mm wide, extending to s1c but not reaching inner margin, postdiscal yellowish line and white submarginal lunules usually vestigial. ♀ similar, markings often better developed.

Genitalia. ♂ in dorsal view like *T. teletusa*, tegumen and scaphial extension fragile, posterior border of juxta gently convex, terminal section of valve short, harpe rather slender. ♀ not examined.

DISTRIBUTION. Colombia, not seen from elsewhere.

NOTE. This species is often confused (e.g. Röber, 1913; Hall, 1929) with *Janatella fellula*. The latter can be identified by the white discal band on the upperside of the hindwing, which is continued to reach the inner margin. Specimens of *T. abas* with the white markings slightly reduced may be mistaken for *A. ardys subota*.

Telenassa jana (Felder & Felder) comb. n.

(Figs 52, 285, 286)

Eresia jana Felder & Felder, 1867: 394. LECTOTYPE ♂, COLOMBIA: Bogotá (*Lindig* (BMNH) here designated [examined]. [Specimen bears original M/S Felder determination label.]

Eresia elaphiaea Hewitson, [1868]: [33], pl. [19], figs 50, 51. LECTOTYPE ♂, ECUADOR (BMNH, Type no. Rh. 8464; Gabriel, 1927: 43), here designated [examined]. Syn. n.

Phyciodes jana (Felder & Felder) Röber, 1913: 439.

Phyciodes elaphiaea (Hewitson) Röber, 1913: 439, pl. 89, row i [fig. 7] (♂).

Phyciodes jana jana (Felder & Felder); Hall, 1929: 129; Forbes, 1945: 190.

Phyciodes jana elaphiaea (Hewitson); Hall, 1929: 129; Forbes, 1945: 190.

♂ forewing 17–19 mm, upperside dark brown with wide orange subapical band, hindwing dark, triple series of submarginal lunules rather faintly marked. ♀ similar, forewing 20 mm, markings paler.

Genitalia. Like *T. teletusa* in both sexes.

DISTRIBUTION. Colombia, Peru, Bolivia, Ecuador.

DISCUSSION. It is difficult to maintain a subspecific distinction between nominate *T. jana* from Colombia and specimens from Bolivia and Peru, referred by Hall to *elaphiaea*.

Telenassa elaphina (Röber) comb. n.

(Figs 53, 287)

Phyciodes elaphiaea elaphina Röber, 1913: 439, pl. 89, row i [fig. 9]. Syntype(s) ♂, BOLIVIA (depository unknown).

Phyciodes elaphina Röber; Hall, 1929: 130; Forbes, 1945: 180, 190.

♂ forewing 19–20 mm, outer margin deeply excavate, like *T. jana*, but upperside subapical band paler yellow, slightly irregular; hindwing upperside marginal lunules yellowish, usually well developed. ♀ unknown.

Genitalia. ♂ in dorsal view like *T. jana* Felder.

DISTRIBUTION. Bolivia.

Telenassa nana (Druce) comb. n.

(Figs 54, 288, 289)

Phyciodes nana Druce, 1874a: 156. LECTOTYPE ♂, PERU: Cosnipata Valley (*Whitely*) (BMNH, Type no. Rh. 8480; Gabriel, 1927: 84), here designated [examined].

? *Eresia geminia* Hopffer, 1874: 351. Syntypes ♂, PERU: Chanchamayo (*Thamm*), BOLIVIA: Moxos (*Pavon*) (? MNHU, Berlin).

? *Phyciodes omosis* Dyar, 1913b: 632. Syntypes, PERU: Pampaconas River (USNM, Washington).

Phyciodes nana Druce; Röber, 1913: 439, pl. 89, row i [fig. 6].

Phyciodes geminia (Hopffer); Röber, 1913: 439, pl. 89, row i [figs 4, 5].

Phyciodes nana nana Druce; Hall, 1929: 131; Forbes, 1945: 180.

Phyciodes nana omosis Dyar; Hall, 1929: 131; Forbes, 1945: 180.

♂ forewing 17–18 mm, upperside dark brown, subapical band white or yellowish (*omosis*), variable; hindwing upperside with triple series of lunules, postdiscal and submarginal lunules rather obscure, greyish. ♀ not seen.

Genitalia. ♂ like *T. teletusa* but larger, more robust; penis massive.

DISTRIBUTION. Peru, Bolivia.

Telenassa nussia (Druce) comb. n.

(Figs 55, 290)

Phyciodes nussia Druce, 1876: 222; Röber, 1913: 439; Hall, 1929: 132; Forbes, 1945: 180. LECTOTYPE ♂, PERU (BMNH, Type no. Rh. 8478; Gabriel, 1927: 88), here designated [examined].

♂ forewing 17 mm, like *T. nana* but on upperside the white subapical band is replaced by a single white submarginal spot in s3. Perhaps better graded as a local form of *T. nana*.

Genitalia. ♂ like *T. nana*. ♀ not available.

DISTRIBUTION. Peru: Chachapoyas (BMNH series 11, 1 ♂, all from the same locality). Hall has recorded a specimen (very doubtfully) from Paraguay.

Telenassa notus (Hall) comb. n.

(Figs 56, 291–293)

Phyciodes notus Hall, 1917: 163. Holotype ♂, PERU: Pozuzo (BM, Brighton) [examined].

Phyciodes notus notus Hall, 1929: 123, pl. 2, fig. 1 (♂).

Phyciodes notus f. *pullopecta* Hall, 1929: 124. Holotype ♂, PERU: Cushi, Huanuco Province (BMNH) [examined].

Phyciodes (Tritanassa) notus Hall; Forbes, 1945: 179, 190.

♂ forewing 16–17 mm, upperside dark brown, 2 small postdiscal spots in s4 and s6. ♀ forewing with 2 white subapical spots and fulvous submarginal spot in s3; hindwing with 4 fulvous discal spots.

Genitalia. ♂ in dorsal view like *Telenassa teletusa*, tegumen fragile.

DISTRIBUTION. Peru, Bolivia.

Telenassa gaujoni (Dognin) **comb. n.**

(Figs 57, 294)

Phyciodes gaujoni Dognin, 1887: 175, fig.; Hall, 1929: 125; Forbes, 1945: 179, 183, 190. Lectotype ♂, ECUADOR: Zamora (BMNH), designated by Hall, 1929: 125 [examined].

♂ forewing 14–17 mm, outer margin slightly excavate, upperside dark grey, submarginal lunules yellowish, preceded by a double series of slender lunules which tend to fuse, forming ocellar spots; underside marbled brown on pale grey, on forewing postdiscal area dark with confused marbling, on hindwing dark submarginal spots in s2–3–4 prominent. ♀ unknown.

Genitalia. ♂ in dorsal view like *T. teletusa*.

DISTRIBUTION. Ecuador, Colombia.

Telenassa trimaculata (Hewitson) **comb. n.**

(Figs 58, 295)

Eresia trimaculata Hewitson, 1869a: 28 [index]. LECTOTYPE ♂, ECUADOR: Rio Verde (*Buckley*) (BMNH, Type no. Rh. 8458; Gabriel, 1927: 120), here designated [examined].

Phyciodes taphius Godman & Salvin, 1878b: 263. LECTOTYPE ♂, ECUADOR: Canelos (*Buckley*) (BMNH, Type no. Rh. 8459; Gabriel, 1927: 116), here designated [examined].

Phyciodes elaphiaea abrupta Röber, 1913: 439, pl. 89, row i [fig. 8]. Syntype(s) ♂, ECUADOR/BOLIVIA: 'Andes' (depository unknown).

Phyciodes trimaculata (Hewitson) Hall, 1929: 127; Forbes, 1945: 180, 183, 190.

♂ forewing 15–17 mm, outer margin slightly excavate; upperside dark brown, markings yellow, an oblique subapical band present, formed of small spots; hindwing with ocellate postdiscal markings and lunulate submarginal line. ♀ not available.

Genitalia. ♂ like *T. teletusa*.

DISTRIBUTION. Ecuador, Bolivia.

Telenassa flavocincta (Dognin) **comb. n.**

(Figs 59, 296, 297)

Phyciodes flavocincta Dognin, 1887: 174, fig.; Hall, 1929: 119; Forbes, 1945: 179, 183, 190. Lectotype ♀, ECUADOR: Zamora (BMNH), designated by Hall, 1929: 120 [examined].

♂ forewing 16–17 mm, outer margin entire, both wings upperside brown, with postdiscal areas and submarginal lunules orange-yellow. ♀ not seen.

Genitalia. ♂ in dorsal view rather massive, like *T. nana*, tegumen short, bilobed scaphial extension short and very fragile.

DISTRIBUTION. Ecuador, N. Peru (Rio Tabacones, 2000 m).

Telenassa catenaria (Godman & Salvin) **comb. n.**

(Figs 60, 298)

Phyciodes catenarius Godman & Salvin, 1880: 123, 131, pl. 4, fig. 11; Hall, 1929: 124; Forbes, 1945: 179, 190. Holotype ♂, COLOMBIA: Sierra Nevada de Santa Marta, Chinchicua Valley (*Simons*) (BMNH, Type no. Rh. 8465; Gabriel, 1927: 27), [examined].

♂ forewing 17 mm, upperside dark grey-brown, markings yellow-grey, delicate, 2 rings in s1b near anal angle, continued with vestigial lunules to costa, discal markings vestigial if present, series of submarginal lunules complete; hindwing upperside postdiscal and premarginal lunules combine to form a complete series of postdiscal rings, submarginal lunules well defined. Underside pale buff, forewing crossed by brown lines, with small, blind ocelli in s5 and in s6. ♀ similar, slightly larger, forewing upperside with red-brown postdiscal shade.

Genitalia. ♂ like *T. teletusa*. ♀ not examined.

DISTRIBUTION. Colombia: Sierra Nevada de Santa Marta; recently also found in the Cordillera Occidental (*G. Bernard & M. Adams*).

Telenassa delphia (Felder & Felder) comb. n.

(Figs 61, 299)

Eresia delphia Felder & Felder, 1861: 103. LECTOTYPE ♀, COLOMBIA: near Muzo, Bogotá Province (*Uricoechea*) (BMNH), here designated [examined]. [Specimen bears original label of Felders'.]

Eresia aceta Hewitson, [1864]: [23], pl. [12], figs 39, 40. LECTOTYPE ♂, COLOMBIA: 'New Grenada' (BMNH, Type no. Rh. 8467; Gabriel, 1927: 6), here designated [examined].

Phyciodes delphia delphia (Felder & Felder); Röber, 1913: 440, pl. 89, row k [fig. 1].

Phyciodes delphia aceta (Hewitson); Röber, 1913: 440.

Phyciodes delphia (Felder & Felder); Hall, 1929: 120; Forbes, 1945: 183, 190.

♂ forewing 15–17 mm, outer margin slightly excavate, upperside dark brown, irregular broken discal band fulvous, and dark-pupilled postdiscal ocelli of similar colour in series across both wings, followed by submarginal lunules. ♀ slightly larger with markings better developed.

Genitalia. ♂ like *T. teletusa*. ♀ not examined.

DISTRIBUTION. Colombia: Muzo, El Baldio (5000 ft [1600 m]), Ecuador?

NOTE. In the BMNH there is a single specimen with upperside dark grey-brown and prominent unpupilled ocellar postdiscal spots, otherwise unmarked. It is clearly closely related to *T. delphia*, and possibly represents an unnamed species. Since only a single specimen is known, I have not named it at present.

Telenassa sepulta (Hall) comb. n.

(Figs 62, 300, 301)

Phyciodes sepultus Hall, 1928a: 12; Hall, 1929: 125, pl. 2, fig. 12; Forbes, 1945: 179, 190. Holotype ♂, PERU: Chachapoyas (*de Mathan*) (BMNH) [examined].

♂ forewing 19 mm, outer margin excavate, apex truncate and apical angle acute; upperside pale postdiscal and submarginal lunules obscure; underside yellow-brown, markings better defined, forewing with 4 pale postdiscal spots. ♀ not known.

Genitalia. Like *T. teletusa*, ♂ base wide, tegumen and scaphial extension well defined, penis with usual generic characters.

DISTRIBUTION. Peru.

ORTILIA gen. n.

Type-species: *Papilio liriopae* Cramer. Gender: feminine.

Rather small butterflies, uppersides usually dark brown or black with yellow or white markings. Specific characters are often poorly defined in the male genitalia. On the forewing upperside a large white or yellow postdiscal spot is present in s1b, s2, and s3, in several species. Markings and genitalia are somewhat atypical in the divergent species *ithra*.

Genitalia. ♂ tegumen usually short, fragile, sometimes vestigial, terminal section of valve curved inwards and a large pre-apical tooth is present in all species, forming a bifid or 'double' apex, harpe variable, exceptionally long in *liriopae* and in *gentina*, saccus always single (entire), penis slender, ostium-keel absent. ♀ examined in all species, bursal support shaped like an egg-cup, and often arising directly from a deeply excavated pocket in the genital plate, post-vaginal scutum large.

DISTRIBUTION. French Guiana, Guyana, Surinam, Brazil, Argentina, Bolivia, W. Peru (*O. gentina* only).

DISCUSSION. The genus is especially characteristic of the eastern regions of South America. In genitalia preparations the twin apical teeth at the valve apices may prove difficult to display.

Key to species of *Ortilia*

2	Upperside markings fulvous	2
-	Upperside markings chiefly white	9
2	Fulvous areas very extensive	3
-	Fulvous areas macular, not extensive	4
3	In dorsal view valve apex almost straight	<i>liriopae</i> (p. 116)
-	In dorsal view valve apex strongly curved	<i>gentina</i> (p. 116)
4	Hindwing upperside discal band tapered to inner margin	5
-	Hindwing discal band wide, not tapered	6
5	Small, forewing 16 mm, hindwing discal band not well defined	<i>polinella</i> (p. 119)
-	Large, forewing 19 mm, hindwing discal band well defined	<i>zamora</i> (p. 119)
6	Forewing elongate	<i>dicoma</i> (p. 119)
-	Forewing not elongate	7
7	Upperside suffused fuscous, markings obscure	<i>velica durnfordi</i> (p. 118)
-	Upperside markings well defined	8
8	Upperside markings yellow, cell-spot prominent, well formed	<i>sejona</i> (p. 118)
-	Upperside markings orange-brown, cell-spot, if present, not prominent, small	<i>velica velica</i> (p. 118)
9	Upperside hindwing submarginal spot in s6-7 fulvous	<i>orthia</i> (p. 117)
-	Upperside hindwing with this spot white	10
10	Upperside forewing postdiscal spot in s4 prominent	<i>ithra</i> (p. 120)
-	Upperside forewing postdiscal spot in s4 lacking	<i>orticas</i> (p. 117)

Ortilia liriopae (Cramer) comb. n.

(Figs 63, 302-304)

Papilio liriopae Cramer, 1775: 2, pl. 1, figs C, D. Syntype(s), SURINAM (depository unknown).? *Argynnis liriopae* (Cramer); Fabricius, 1807: 285.? *Dryas reticulata liriopae* (Cramer); Hübner, 1808: pl. 40.*Phyciodes liriopae* (Cramer); Röber, 1913: 435, pl. 89, row a [figs 1, 2]; ? Hayward, 1964b: 359, pl. 18, fig. 10.? *Phyciodes liriopae liriopae* (Cramer); Hall, 1929: 64.*Phyciodes (Tritanassa) liriopae* (Cramer); Forbes, 1945: 157-158, 188, 190.

♂ forewing 16-17 mm, upperside rather dark fulvous, markings dark brown (? black when fresh); hindwing underside with an irregular reddish discal line. ♀ similar, slightly larger.

Genitalia. ♂ tegumen short, fragile, difficult to define; valve with distal section short, apex slightly inturned, harpe rather long; saccus narrow; penis straight, suspensory ligament near mid-point. ♀ genital plate small, ductus not clearly chitinised, bursal support relatively large.

DISTRIBUTION. French Guiana, Guyana, Surinam and N. Brazil.

DISCUSSION. This species is easily confused with *Tegosa orobia*, but *liriopae* can be identified by the slightly wavy red line across the discal area on the underside of the hindwing. Forbes (1945: 188-189) discusses the confusion between *liriopae* and *claudina* (in which he includes *orobia*).*Ortilia gentina* sp. n.

(Figs 64, 305, 306)

♂ forewing 14-17 mm, upperside ground-colour fulvous-yellow, markings black, slightly variable, wing borders black, 2.5 mm or even more, prominent, subapical band rather irregular, often imperfectly defined medially, extending into submarginal area in s3, some dark striae across cell; hindwing upperside basal area slightly dusky, dark marginal border prominent, including poorly defined submarginal lunules in some specimens, underside postdiscal spots usually well marked.

Genitalia. ♂ in dorsal view with organs wider, distal section of valve longer, apex slender, strongly curved inwards, harpe placed further forwards at centre of valve. ♀ not examined.

Holotype ♂, **Brazil**: São Paulo, Anhangahy, xi. 1926 (*R. Spitz* genitalia slide no. 2698) (BMNH).

Paratypes. **Brazil**: 1 ♂, Mato Grosso (genitalia slide no. 826). **Bolivia**: 1 ♂, no further data (genitalia slide no. 1082); 1 ♂, Santa Cruz de la Sierra (genitalia slide no. 825); 1 ♂, Bueyes (genitalia slide no. 1081). **Argentina**: 1 ♂, Tucumán (genitalia slide no. 1083).

DISTRIBUTION. Brazil, Argentina (Tucumán), Peru, Bolivia, Paraguay. Collected in November, February, April, July. Probably emerges in two or perhaps three annual broods.

DISCUSSION. This species resembles *O. liriopoe* closely. Distinctive features include the paler upperside ground colour, and on the hindwing the better-defined basal dark area. On the hindwing underside the reddish oblique line is prominent in *liriopoe*, and the series of postdiscal spots is obvious in *gentina*, while the oblique line is vestigial and is not prominent. The male genitalia are easily distinguished.

Ortilia orthia (Hewitson) **comb. n.**

(Figs 65, 307)

Eresia orthia Hewitson, [1864]: [19], pl. [10], figs 21, 22. **LECTOTYPE** ♂, **BRAZIL**: Minas Geraes (BMNH, Type no. Rh. 8449; Gabriel, 1927: 91), here designated [examined].

Phyciodes poltis Godman & Salvin, 1878b: 261; Godman & Salvin, 1882: 200, pl. 21, figs 28, 29; Röber, 1913: 438, pl. 88, row i [fig. 3] (very poor fig.); Hall, 1929: 81). **LECTOTYPE** ♂ [**BRAZIL**: Minas Geraes] (BMNH, Type no. Rh. 8450; Gabriel, 1927: 98), here designated [examined]. [For locality see Hall, 1929: 81.]

Phyciodes orthia (Hewitson) Röber, 1913: 438, pl. 89, row h [figs 8–10]; Hall, 1929: 80; Hayward, 1964b: 346, pl. 18, fig. 17.

Phyciodes orthia ab. *evanescens* Röber, 1913: 438. Syntype(s), [? **BRAZIL**] (depository unknown).

Phyciodes orthia f. *roeberi* Hall, 1935: 221. Holotype ♀, **BRAZIL**: Santa Maria, Rio Grande do Sul, 1200 ft [420 m], i. 1920 (*A. Hall*) (BM, Brighton).

Phyciodes (Tritanassa) orthia (Hewitson); Forbes, 1945: 177, 190.

♂ forewing 15 mm, upperside dark brown, markings pale yellow, sometimes shading to white, cell-spot well developed, postdiscal spots in s1b, s2 and s3 rather small with smaller spot placed more distally and well separated in s1b; hindwing discal band usually darker orange anteriorly in s7. ♀ larger, submarginal markings often better defined.

Genitalia. ♂ like *O. liriopoe*, in dorsal view slightly narrower, harpe shorter, straight, posterior border of juxta gently convex.

DISTRIBUTION. S. Brazil, Paraguay, Argentina.

NOTE. The form *evanescens* (black and white) is mostly found in Minas Gerais (Prof. Keith Brown, pers. comm.).

Ortilia orticas (Schaus) **comb. n.**

(Figs 71, 308–309)

Phyciodes orticas Schaus, 1902: 394; Röber, 1913: 445. Holotype ♂, **BRAZIL**: Castro, Parana (USNM, Type no. 5888) [examined].

Phyciodes orticas orticas Schaus; Hall, 1929: 105.

Phyciodes (Tritanassa) orticas orticas Schaus; Forbes, 1945: 182, 190.

♂ forewing 18 mm, upperside black, markings white, cell-spot minute, vestigial, oblique bar in s5–s7 short, postdiscal spot in s1b–s3 large; hindwing upperside white discal band crossed by black veins, submarginal lunules vestigial or absent; forewing underside base orange-fulvous. ♀ similar, slightly larger.

Genitalia. ♂ in dorsal view like *O. orthia* but base wider, discal section of valve longer. ♀ bursal support well chitinized.

DISTRIBUTION. Brazil (Parana, Rio de Janeiro, etc.), Argentina (Entre Rios).

Ortilia sejona (Schaus) comb. n., sp. rev.

(Figs 66, 310)

Phyciodes sejona Schaus, 1902: 393; Röber, 1913: 438, pl. 89, row i [figs 2, 3] (♂, ♀). Holotype ♀, BRAZIL: São Paulo (USNM, Type no. 5886).

[*Phyciodes velica velica* (Hewitson); Hall, 1929: 81. Misidentification.]

Upperside brown, markings yellow, like *Telenassa teletusa*. ♂ forewing 16–17 mm, cell spot prominent, submarginal markings present, postdiscal oval mark in s1, s2 and s3 entire (distinction from *O. orthia*); hindwing upperside transverse band usually wide, blending anteriorly with submarginal lunules in s7; underside pale transverse band well defined. ♀ similar, larger.

Genitalia. In dorsal view ♂ organs narrow, like *O. orticas*, tegumen fragile, vincula wide, posterior section of valve relatively stout. ♀ not examined.

DISTRIBUTION. Brazil, restricted to the states of Goiás and Minas Gerais, to the border of Parana and Santa Catarina (*Ebert*).

DISCUSSION. This species was misidentified by Hall as a synonym of *velica*, and consequently overlooked by Forbes (1945).

Ortilia velica (Hewitson) comb. n.

(Figs 67, 311, 312)

Eresia velica Hewitson, [1864]: [20], pl. 10, figs 25, 26.

♂ forewing 15 mm, upperside dark brown, with or without fulvous markings arranged as in *O. orthia*. ♀ similar, usually larger.

Genitalia. ♂ in dorsal view, like *O. orthia*, harpes slightly curved, vincula appear wider.

DISTRIBUTION. S. Brazil, Uruguay, Paraguay, Argentina.

Two subspecies with similar genitalia.

Ortilia velica velica (Hewitson)

Eresia velica Hewitson, [1864]: [20], pl. [10], figs 25, 26. LECTOTYPE ♂, [BRAZIL: Minas Gerais] (BMNH, Type no. Rh. 8451; Gabriel, 1927: 121], here designated [examined].

Phyciodes velica velica (Hewitson) Röber, 1913: 438; Hall, 1929: 81; Forbes, 1945: 172, 175, 179, 190.

♂ forewing 16 mm, markings of upperside dull fulvous, arranged as in *O. orthia*, hindwing upperside fulvous discal area wide.

DISTRIBUTION. S. Brazil (only in southern Minas Gerais and São Paulo), and Uruguay (here often with dark upperside suffusion forming transition to following subspecies).

Ortilia velica durnfordi (Godman & Salvin)

Phyciodes durnfordi Godman & Salvin, 1878b: 263. LECTOTYPE ♂, ARGENTINA: Buenos Aires (*H. Durnford*) (BMNH, Type no. Rh. 8452; Gabriel, 1927: 43), here designated [examined].

Phyciodes velica dictynna Röber, 1913: 438, pl. 89, row k [figs 5–7]. Syntypes ♂, ♀, BRAZIL; ARGENTINA: Palermo, Gardens of Agriculture (*Seitz*) (? MNHU, Berlin).

Phyciodes velica durnfordi Godman & Salvin; Hall, 1929: 82; Forbes, 1945: 179; Hayward, 1964b: 348, pl. 18, fig. 19.

♂ upperside fulvous markings reduced by dark suffusion, markings almost absent in extreme examples.

DISTRIBUTION. Brazil (São Paulo and southwards), Argentina, Uruguay and Paraguay. Specimens with intermediate characters common in northern localities.

Ortilia zamora (Hall) comb. n., stat. rev.

(Figs 68, 313)

Phyciodes zamora Hall, 1917: 161. Lectotype ♂, 'Venezuela' [S. Brazil] (BM, Brighton), designated by Hall, 1929: 105 [examined].

Phyciodes orticas zamora Hall; Hall, 1929: 105, pl. 1, fig. 13 (♂); Forbes, 1945: 182.

♂ forewing 19 mm, outer margin slightly excavated, upperside dark brown, markings orange-yellow, like *O. orticas* but with vestiges of basal markings, small spot present in cell before disco-cellular vein, a smaller spot on the vein, postdiscal markings in darker tone of orange-brown in s3-s5; hindwing yellow discal band as in *O. orticas*, extending to inner margin, not crossed by dark veins. ♀ not seen.

Genitalia. ♂ like *O. orticas*, tegumen very fragile, short, posterior border of juxta gently curved, saccus tapering.

DISTRIBUTION. Brazil: restricted to the mountains from central Espirito Santo southwards to central São Paulo (Prof. Keith Brown, Pers. comm.).

Ortilia dicoma (Hewitson) comb. n.

(Figs 69, 314-316)

Eresia dicoma Hewitson, [1864]; [23], pl. [12], figs 41, 42. LECTOTYPE ♂, [BRAZIL] (BMNH, Type no. Rh. 8546; Gabriel, 1927: 40), here designated [examined].

Phyciodes dicoma (Hewitson) Röber, 1913: 445, pl. 90, row g [fig. 6] (♂); Hall, 1929: 138; Forbes, 1945: 187, 190; Hayward, 1964b: 360, pl. 18, fig. 18.

♂ forewing 19 mm, elongate, upperside orange-yellow, costa and outer margin bordered black, a black oblique postdiscal bar; hindwing with outer margin broadly black and base narrowly black. ♀ similar, upperside with fulvous tone paler.

Genitalia. ♂, in dorsal view, base wide, then tapering, valve apex strongly inturned, posterior border of juxta convex with deep central notch, harpe slender, inclined at an angle of 45°, penis with apical section slender, lacking ostium-keel. ♀ like *O. velica*.

DISTRIBUTION. S. Brazil (from Dist. Federal southwards to Rio Grande do Sul, always in forest), Paraguay, Argentina (Hayward, 1964b: 361).

Ortilia polinella (Hall) comb. n.

(Figs 70, 317)

Phyciodes polinella Hall, 1928a: 12, Hall, 1929: 139, pl. 2, figs 10 (♂), 11 (♀); Forbes, 1945: 188, 190. Holotype ♀, BRAZIL: San Jacintho Valley, Minas Geraes (BMNH) [examined].

♂ forewing c. 15 mm, upperside dark brown, obscurely marbled with orange; hindwing with rather broad discal orange band (Fig. 70), and faint, very fine submarginal lunules; brownish orange below, with the fine pattern rather indistinct. ♀ forewing 16-17 mm, upperside dark brown, markings orange-yellow, postdiscal spot in s1b-s2 present, paler spot in s4; hindwing discal band orange-yellow, becoming pale yellow and very narrow near inner margin; underside pattern rather better defined than in male.

Genitalia. ♂ like *O. dicoma*, in dorsal view tegumen fragile, narrow, with central sulcus, valve apex less curved, harpe more massive. (N. B. tegumen slightly distorted in figure.)

DISTRIBUTION. Brazil: Minas Geraes, Rio de Janeiro and Espirito Santo. A rare and local species; there are three males and six females in the BMNH.

DISCUSSION. Hall's original description refers only to the female sex, the 'type ♀' of the original description being stated to be in the Rothschild (Tring) collection. Later, Hall (1929: 139) claims that the holotype is a male in the National (BMNH) collection. Finally, I have seen a male in the Booth Museum, Brighton (Hall coll.) which also appears to be a 'holotype'! The true holotype ♀, labelled 'type' by Hall and now in the BMNH, has now been clearly and unequivocally so labelled.

***Ortilia ithra* (Kirby) comb. n.**

(Figs 72, 318–320, 490)

[*Argynnis ianthe* (Fabricius); Godart, [1824]: 818. Misidentification.][*Acca hera* (Cramer); Hübner, [1826]: pl. 44, figs 1–4. Misidentification.]*Neptis ithra* Kirby, 1871: 252. Syntypes ♂, ♀, BRAZIL (lost). [*N. ithra* was named by reference to Hübner's misidentified figures of *Papilio* (as *Acca*) *hera* Cramer; these specimens are lost.]*Phyciodes ithra* (Kirby) Kirby, 1900: 18; Hayward, 1964: 357, pl. 18, figs 20 (♂), 21.[*Phyciodes ianthe ianthe* (Fabricius); Röber, 1913: 443, pl. 90, row d [fig. 9], row e [fig. 1]. Misidentification.]*Phyciodes ianthe atra* Röber, 1913: 443, pl. 90, row b [fig. 7], row c [fig. 8]. [Hall, 1929: 104 considers *atra* to be a misprint for *ithra*.]*Phyciodes janthe* ab. *nigra* Giacomelli, 1928: 679. Holotype ♂, ARGENTINA: Rioja, Cosquin (depository unknown).*Phyciodes ithra rufocincta* Hall, 1928a: 11; Hall, 1929: 104, pl. 1, fig. 3; Forbes, 1945: 182. Holotype ♂, ARGENTINA: Cordoba Hills (BM, Brighton) [examined]. **Syn. n.***Phyciodes ithra ithra* (Kirby); Hall, 1929: 103; Forbes, 1945: 182, 187, 190.*Phyciodes janthe* ab. *schaeferi* Köhler, 1945: 256, pl. 20, fig. 4. Holotype, ARGENTINA: Catamarca, Sierra de Ambato, 2000 m ('Schaeffer Coll.').

♂ forewing 17–20 mm, elongate, upperside markings white, cell-spot small, postdiscal spot in s1b, s2 s3 large; hindwing upperside discal band narrow, crossed by dark veins, small submarginal spot in s7 clearly marked, other submarginal spots variable, well developed in Mato Grosso specimens; forewing underside base bright orange-yellow, enclosing white, dark-ringed cell-spot. ♀ similar.

Genitalia. ♂ organs large, in dorsal view tegumen short, but well defined, scaphial extension very short, saccus long, massive, apical section of valve short; penis in side view slender. ♀ bursal duct partly chitinized.**DISTRIBUTION.** Brazil, Argentina, Paraguay, Uruguay, Bolivia. Absent from most western regions, but one of the commonest and most widely distributed species in the East.**NOTE.** Two figures giving the dorsal view of male genitalia are included. In Fig. 318 from Paraguay, the apical section of the valve is slightly longer and the harpe less massive than that shown in Fig. 319 from the Mato Grosso.***TISONA* gen. n.**Type-species: *Phyciodes saladillensis* Giacomelli. Gender: feminine.The single known species is a small butterfly with superficial resemblance to species of *Tegosa*, but differing from all other known Phycioidini in wing-markings and in genital structure.

♂ upperside of both wings orange-fulvous, markings black in a rather complicated pattern defining a series of submarginal spots on both wings. Underside paler, yellow, markings orange, hindwing with a prominent brown postdiscal stripe. Sexes similar.

Genitalia. ♂, in dorsal view, tegumen bilobed, short and very fragile, valve wide, tapering abruptly to a short posterior process, posterior border of juxta convex, saccus entire (lingulate) with a shallow terminal notch; penis about 3 times the length of valve, slender, apex with 2 twisted tapering processes. ♀ bursal duct partly chitinized, bursal support well formed.***Tisona saladillensis* (Giacomelli) comb. n.**

(Figs 73, 74, 321–324)

Phyciodes saladillensis Giacomelli, 1911: 22.

For description of the species, the main features are covered in the generic diagnosis.

DISTRIBUTION. N. Argentina, Bolivia.

Two subspecies with similar genitalia.

Tisona saladillensis saladillensis (Giacomelli)

(Figs 73, 321–324)

Phyciodes saladillensis Giacomelli, 1911: 22; Röber, 1913: 437, pl. 89, row f [figs 1, 2]; Hall, 1929: 55; Forbes, 1945: 187, 190; Hayward, 1964b: 355, pl. 18, fig. 8 (♂). Holotype (sex ?), ARGENTINA: Saladillo-Santa Cruz (MACN, Buenos Aires).

♂ forewing 17 mm, upperside bright fulvous yellow, black markings heavy and complex on both wings.

DISTRIBUTION. N. Argentina: Tucumán, Catamarca, La Rioja, Salta.

Tisona saladillensis clarior subsp. n.

(Fig. 74)

Differs from nominate race in the following aspects: upperside paler yellow, black markings more delicate; ♂ hindwing upperside with wide discal area unmarked, black postdiscal lunules vestigial or absent, but series of submarginal lunules complete; underside paler, discal band grey-brown. ♀ not available.

Genitalia examined (genitalia prep. no. 878).

Holotype ♂, **Bolivia**: Cochabamba, Yunga del Espiritu Santo (*P. Germain*) (BMNH).

Paratypes. **Bolivia**: 3 ♂, same data as holotype; 2 ♂, 'Bolivia', ex *Germain*; (BMNH).

DISTRIBUTION. Bolivia: Cochabamba.

TEGOSA gen. n.

Type-species: *Acraea claudina* Eschscholtz. Gender: feminine.

Small butterflies, forewing length 13–18 mm, uppersides characteristically yellow-buff, wing margins black, forewing with an oblique, black postdiscal bar, often incomplete, enclosing a sub-apical band or bar of ground-colour. Venation and other anatomical characters show the usual tribal features, forewing outer margin gently convex, never excavate. Sexes similar, or nearly so.

Genitalia. ♂ tegumen well formed, chitinized, followed by a relatively long scaphial extension, well defined, ending abruptly with minute spines at the posterior lateral angles, which appear in dorsal view as spiny bosses; valves oval, tapering to a slender terminal process with a small tooth immediately above it; harpe slender, in dorsal view usually almost straight; saccus deeply cleft or entire, or with a terminal notch; penis straight, with a small ostium-keel. The shape of the posterior border of the juxta may be useful. ♀ (examined in *T. fragilis* and *T. anieta*) with bursal duct chitinized, arising from a deep antevaginal pit, bursal support globular.

DISTRIBUTION. The species are very widely distributed through Central and South America, from southern Mexico to about 43°S in Argentina and Peru.

DISCUSSION. The male genitalia show a striking difference between the species of the eastern and western regions of South America. In the eastern region, from Trinidad across Brazil and Argentina, southwards to Buenos Aires, and including part of Venezuela, Paraguay and Bolivia, the saccus is deeply cleft and the tegumen elongate, wide, tapering gradually to an abrupt, truncate apex, with minor variation in all eastern species, and including two rare species endemic in Ecuador and N. Peru. In the western region, from Mexico through Central America and along the Andes, the saccus is entire, the tegumen and scaphial extension racket-shaped, i.e. the extension abruptly tapered and then expanded again to its apex, in dorsal view appearing forked with spiny boss at the end of each lateral rib. These differences might suggest a generic distinction, but there are some species with intermediate characters and the wing-patterns are so similar that a close relationship is clearly present between all species within the group.

While there is not an obvious mimetic association with protected species, there is a remarkable similarity in wing-markings between *Tegosa claudina* and two species of a distinct genus, *Ortilia liriopae* and *O. gentina*. The general structure of the genitalia in *Tegosa* suggests

relationship with *Eresia*, and it is interesting that the colour scheme and upperside wing-markings of *Eresia selene* are similar to those of *Tegosa*, e.g. *T. etia*, probably indicating a mimetic relationship.

The male genitalia of *Tegosa* species are among the smallest known among the Rhopalocera. Examination is difficult as the globular shape does not present a flat surface to support the parts in a constant position for close comparison. The organs are too small for successful dissection, and they should be mounted entire. A dorsal view showing the shape of the tegumen and the scaphial extension is the most helpful.

Key to species of *Tegosa*

Note. It has not been practicable to include *T. tissoides* (p. 120) and *T. pastazena* (p. 125) in this key.

- | | | |
|----|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1 | Male tegumen racquet-shaped (Fig. 346) | 2 |
| - | Male tegumen not racquet-shaped (Fig. 334) | 12 |
| 2 | Upperside unmarked except forewing apex black, hindwing outer margin with or without black marginal border | <i>guatemalena</i> (p. 125) |
| - | Upperside not so marked | 3 |
| 3 | Forewing upperside black costal bar incomplete or vestigial | <i>anieta luka</i> (p. 126) |
| - | Forewing not so marked | 4 |
| 4 | Wing-base, costa and marginal borders broadly black, postdiscal bar isolating narrow subapical orange band | <i>anieta anieta</i> (p. 126) |
| - | Upperside not so marked | 5 |
| 5 | Like <i>T. anieta anieta</i> , but black upperside markings extended, forewing pointed | <i>anieta cluvia</i> (p. 126) |
| - | Like <i>T. anieta cluvia</i> , but forewing upperside with small orange cell-spot | <i>nazaria</i> (p. 127) |
| 6 | Upperside ground-colour pale yellow | <i>flavida</i> (p. 124) |
| - | Upperside not so marked | 7 |
| 7 | Upperside forewing with additional markings at base and in cell | <i>ursula</i> (p. 124) |
| - | Forewing not so marked | 8 |
| 8 | Upperside hindwing with coloured area reduced to discal band | 9 |
| - | Upperside hindwing black | 11 |
| 9 | Hindwing upperside discal band orange | <i>nigrella f. niveonotis</i> (p. 128) |
| - | Hindwing not so marked | 10 |
| 10 | Hindwing discal band white | <i>nigrella f. niveonotis</i> (p. 128) |
| - | Hindwing discal band obscured by general fuscous suffusion | <i>nigrella f. nigrella</i> (p. 128) |
| 11 | Forewing upperside with orange markings | <i>etia f. etia</i> (p. 128) |
| - | Forewing upperside entirely black | <i>etia f. tissa</i> (p. 128) |
| 12 | ♂ tegumen base wide, tapering evenly to truncate apex (Fig. 334) | 13 |
| - | ♂ tegumen base wide, tapering abruptly with angle at point of contraction (Fig. 325) | 14 |
| 13 | Forewing upperside markings well developed | <i>orobia</i> (p. 123), <i>infrequens</i> (p. 124) |
| - | Forewing upperside postdiscal markings vestigial | <i>fragilis</i> (p. 124) |
| 14 | Forewing upperside markings well developed | <i>claudina</i> (p. 122) |
| - | Forewing upperside markings incomplete | <i>similis</i> (p. 123) |

Tegosa claudina (Eschscholtz) **comb. n.**

(Figs 75, 325, 326)

Acraea claudina Eschscholtz, 1821: 212, pl. [8], figs 18a, b. Syntype(s), [ARGENTINA] (depository unknown).

? *Argynnis flavia* Godart, [1824]: 818. Syntype(s), BRAZIL (? MNHN, Paris).

? [*Phyciodes liriopae* (Cramer); Hall, 1929: 63, *in part.* Misidentification.]

? *Phyciodes liriopae claudina* (Eschscholtz); Hall, 1929: 65.

? *Phyciodes (Eresia) claudina* (Eschscholtz); Forbes, 1945: 157-160, 188-9, *in part.*

? *Phyciodes claudina* (Eschscholtz); Hayward, 1964b: 334, pl. 18, fig. 9.

Upperside fulvous yellow; ♂ forewing 15-16 mm, cell crossed by black striae, post-discal black bar complete, subapical yellow bar divided into two almost equal areas, wing apex and outer margin black; hindwing black marginal border about 2 mm wide with vestigial submarginal lunules near anal angle,

postdiscal dots in each space almost always present; hindwing underside with reddish striae in a confused pattern, almost always with a small, darker spot at cell-end, postdiscal spots in complete series, spot in s3 emphasised, often with a small dark suffusion. ♀ similar, forewing 18 mm, upperside slightly paler.

Genitalia. ♂ in dorsal view, tegumen short, scaphial extension tapered with a blunt lateral angle, spiny bosses well defined as rather small spiny knobs, posterior border of juxta slightly prominent, saccus deeply cleft; penis in side view slender, ostium keel present, morulae small.

DISTRIBUTION. Brazil (Parana), Argentina (especially in north-west; Chaco, Resistencia, Villa Ana etc.), Paraguay (common), ? Peru.

NOTE. Eight males have been checked by dissection (3 ♂, Paraguay, slide nos 821, 2711, 2763; 1 ♂, Peru, no. 1074; 1 ♂, Brazil, Parana, no. 863; 3 ♂, Argentina, slide nos 2764, 2766(1), 2766(2)).

Tegosa similis nom. n.

(Figs 76, 327–333)

Papilio thymetus Fabricius, 1787: 30. LECTOTYPE ♂, [BRAZIL: Minas Geraes] 'Indiis' (UM, Glasgow), here designated [examined]. [Junior primary homonym of *Papilio thymetus* Cramer, 1777.]

[*Phyciodes fragilis* (Bates); Röber, 1913: 445, pl. 89, row a [fig. 9] (♂). Misidentification.]

? *Phyciodes liriopae thymetus* (Fabricius); Hall, 1929: 66.

[*Phyciodes (Eresia) claudina fragilis* (Bates); Forbes, 1945: 157–160. 189. ? Misidentification.]

Upperside usually pale orange-yellow; ♂ forewing 16–18 mm, costa dark with striae running into cell, postdiscal dark bar incomplete, often vestigial, then defined only by a mark on costa, apex and outer margin dark, subapical yellow band not divided; hindwing dark marginal border prominent, including marginal lunules, dark postdiscal dots usually present in each space; underside paler yellow, with faint brownish markings. ♀ similar, slightly larger.

Genitalia. ♂ tegumen short, in dorsal view scaphial extension tapered with blunt lateral angle, apex truncate, spiny bosses conspicuous, close together, lying transversely, posterior of juxta with low central prominence, saccus cleft often incomplete. ♀ ductus chitinized, arising from a deep pit, surmounted by globular bursal support.

DISTRIBUTION. Trinidad, Brazil, N. Argentina, Venezuela, Colombia, Guatemala, Peru, Ecuador, Cayenne, Paraguay, Mexico.

NOTE. Identification has been confirmed by genital examination of the following specimens. Mexico, Santos (slide no. 894); Colombia, Cauca V. (no. 2716); Venezuela (no. 856); Peru, Huancamayo (no. 2759); Ecuador (no. 2715); Guatemala (no. 858); Brazil, Para (no. 874); Trinidad. (no. 893); Brazil, Bahia (♀, slide no. 1080); Rio de Janeiro (no. 2701).

Tegosa orobia (Hewitson) comb. n., sp. rev.

(Figs 77, 334–336)

Eresia orobia Hewitson, [1864]: [19], pl. [10], figs 23, 24. LECTOTYPE ♀, [BRAZIL] (BMNH, Type no. Rh. 8532; Gabriel, 1927: 91), here designated [examined].

[*Phyciodes liriopae claudina* (Eschscholtz); Röber, 1913: 435, pl. 89, row a [fig. 4] (♀). Misidentification.]

Phyciodes liriopae orobia (Hewitson); Röber, 1913: 435, pl. 89, row b [fig. 7].

Phyciodes liriopae claudina f. *orobia* (Hewitson); Hall, 1929: 66.

? *Phyciodes liriopae claudina* ab. *immaculata* Hayward, 1935: 223. Holotype, ARGENTINA: Santiago del Estero ('Breyer Coll.').

Phyciodes (Eresia) claudina anieta ab. *orobia* (Hewitson); Forbes, 1945: 160, 189.

Upperside fulvous-yellow to darker orange-fulvous; ♂ forewing 15–19 mm, black markings rather extensive with black striae at wing-base and in cell, subapical orange bar divided into two or three areas; hindwing upperside marked with basal striae, postdiscal dots and submarginal lunules; hindwing underside with brown markings, a dark marginal patch in s4 often extended basally.

Genitalia. ♂ in dorsal view, tegumen wide, scaphial extension evenly tapered to truncate apex, terminal bosses appearing as small, round spiny knobs, posterior border of juxta gently convex, harpe slender, saccus deeply cleft; penis slender, ostium keel small. ♀ not figured.

DISTRIBUTION. Brazil (Parana etc.), Paraguay (Sapucay), Argentina (Buenos Aires).

Tegosa fragilis (Bates) **comb. n., stat. rev.**

(Figs 78, 337, 338)

Melitaea fragilis Bates, 1864b: 189. LECTOTYPE ♂, BRAZIL: banks of Cupari, branch of the Tapajos (H. W. Bates) (BMNH, Type no. Rh. 8531; Gabriel, 1927: 52), here designated [examined].
 [*Phyciodes guatemalena* (Bates); Röber, 1913: 435, pl. 89, row b [figs 1-3]. Misidentification.]
 [*Phyciodes liriopae thymetus* (Fabricius); Hall, 1929: 66. Misidentification.]
Phyciodes (*Eresia*) *claudina fragilis* (Bates); Forbes, 1945: 160, 189.

Upperside fulvous-yellow, markings black; ♂ forewing 15-17 mm, elongate, costa narrowly dark with black striae running into cell, postdiscal bar incomplete, dark suffusions at wing-bases minimal; hindwing underside markings yellow-brown, a strongly convex postdiscal line usually well developed. ♀ similar, upperside markings better defined.

Genitalia. ♂ in dorsal view like *T. orobia*, tegumen evenly tapering to truncate apex, saccus deeply cleft; penis in side view slender.

DISTRIBUTION. Venezuela (Siapure), Brazil.

NOTE. Identification has been confirmed by genitalic examination of the following specimens: 2 ♂, Venezuela, Siapure (slide nos 848, 866); 1 ♂, Brazil, Alta Mira (no. 2595).

Tegosa infrequens sp. n.

(Figs 79, 339, 340)

♂ upperside fulvous, like *T. anieta*, forewing 16 mm, oblique postdiscal bar complete, enclosed fulvous bar not divided; hindwing underside markings very faint, pale orange-brown. ♀ slightly larger, markings as in ♂.

Genitalia. ♂ like *T. claudina*, apex of scaphial extension of tegumen slightly narrower, posterior border of juxta with low central prominence; penis slender. ♀ not dissected.

Holotype ♂, **Brazil:** São Paulo, Bahuru (*Hempel*) (genitalia slide no. 1075) (BMNH).

Paratypes. **Brazil:** 2 ♂, Petropolis (genit. sl. nos 2764); 2 ♂, same data as holotype (genit. sl. no. 857); 1 ♂, Minas Gerais, San Jacintho Valley (genit. sl. no. 2765); 1 ♀, Quipapa, Pernambuco. **Bolivia:** 2 ♂, R. Tanampaya (genit. sl. no. 2714, 2759). **Peru:** 1 ♂, Chanchamayo (genit. sl. no. 1074). (All in BMNH.)

DISTRIBUTION. Brazil, Bolivia (R. *Tanampaya*), Peru (Chanchamayo).

Tegosa ursula (Staudinger) **comb. n.**

(Figs 80, 341)

Phyciodes ursula Staudinger, 1894: 70, pl. 2, fig. 3; Röber, 1913: 435, pl. 89, row c [fig. 3] (♂); Hall, 1929: 54; Forbes, 1945: 158, 189; Hayward, 1964b: 333, pl. 18, fig. 11 (♂). 1 ♂, 2 ♀ syntypes, **BOLIVIA:** Cocapata; Bueyes (*Garlepp*) (MNHU, Berlin).

♂ forewing 15-16 mm, upperside fulvous with irregular reticulate markings black; hindwing black marginal lunules and marginal border conspicuous. ♀ similar.

Genitalia. ♂ tegumen wide in dorsal view, slightly tapered posteriorly, apex truncate, terminal bosses represented by slightly oblique dense bars each with 5 or 6 short teeth on each side, dorsal and ventral plates lightly chitinized, harpes sharply curved, saccus deeply cleft. ♀ not examined.

DISTRIBUTION. Argentina (Tucuman, Salta, Jujuy—specimens in BMNH), Bolivia (no specimens seen).

Tegosa flavida (Hewitson) **comb. n.**

(Figs 81, 342)

Eresia flavida Hewitson, [1868]: [34], pl. [19], fig. 61. LECTOTYPE ♂, **ECUADOR** (BMNH, Type no. Rh. 8527; Gabriel, 1927: 51), here designated [examined].

Phyciodes albescens Röber, 1913: 444, pl. 90, row f [fig. 4]. Holotype ♀, **ECUADOR:** Quevedo (*Buchwald*) (BMNH) [examined].

Phyciodes flavida (Hewitson) Röber, 1913: 444, Hall, 1929: 75; Forbes, 1945: 158, 189.

♂ forewing 14–15 mm, upperside pale yellow, apex and outer margin dark brown (? black when fresh); hindwing outer margin dark; no other markings. ♀ similar, slightly larger.

Genitalia. Like *T. claudina*, ♂ tegumen moderately tapered in dorsal view, spinous areas of scaphial extension small, approximately rounded, harpes slender, slightly curved, saccus pedunculate, partially cleft (single preparation). ♀ not examined.

DISTRIBUTION. Ecuador, N. Peru.

Tegosa tissoides (Hall) comb. n.

(Figs 90, 343)

Phyciodes tissoides Hall, 1928a: 11; Hall, 1929: 72, pl. 1, fig. 1 (♂); Forbes, 1945: 158, 189. Holotype ♂, ECUADOR: Angamarca, Salidero, 350 ft [110 m] (BMNH) [examined].

♂ forewing 14 mm, uppersides of both wings black with brown reflections; forewing underside brown, marginal markings vestigial if present; hindwing underside anal area and disc white shading into brown near outer margin.

Genitalia. In dorsal view ♂ tegumen slightly elongate, tapered, scaphial extension with terminal bosses not prominently spined but appearing on each side as oblique oval structures; harpe relatively stout; saccus elongate, entire, with shallow terminal notch, preparation no. 1117 (single preparation).

DISTRIBUTION. Ecuador. BMNH collection includes 4 males with holotype, all from Angamarca, 110 m, February (Hall, 1929: 73 records one of these specimens as a female).

Tegosa pastazena (Bates) comb. n., stat. n.

(Figs 82, 344, 345)

Melitaea liriopae var. *pastazena* Bates, 1864b: 189 (footnote). LECTOTYPE ♂, ECUADOR: Canelos, banks of the Pastaza (*Spruce*) (BMNH, Type no. Rh. 8530; Gabriel, 1927: 94), here designated [examined].

Phyciodes liriopae pastazena (Bates); Hall, 1929: 67.

Phyciodes (*Eresia*) *claudina anieta* f. *pastazena* (Bates); Forbes, 1945: 160.

♂ forewing 16–17 mm, like *T. anieta* but slightly larger; upperside tawny orange, costa black to origin of oblique costal bar, enclosed orange subapical band not divided, outer margin broadly black; hindwing dark border along outer margin narrow but clearly defined; hindwing underside postdiscal dark spots well developed in s1b–s6. ♀ similar, slightly larger.

Genitalia. ♂ tegumen rather narrow, scaphial extension narrow, elongate, lateral walls almost parallel, each posterior spiny angle scarcely defined as a boss, saccus single with terminal notch.

DISTRIBUTION. Bolivia, Peru, Ecuador.

DISCUSSION. This species appears to be very local but widely distributed in the south-western area of generic distribution. In four specimens examined the characters of the genitalia are constant and the external markings also recognisable, but identification must be confirmed by examination of the genitalia.

Tegosa guatemalena (Bates) comb. n., stat. n.

(Figs 83, 346–348)

Melitaea fragilis var. *guatemalena* Bates, 1864b: 192–193. LECTOTYPE ♂, GUATEMALA: central valleys (BMNH, Type no. Rh. 8529; Gabriel, 1927: 56), here designated [examined].

[*Phyciodes fragilis* (Bates); Godman & Salvin, 1882: 198, pl. 21, fig. 23 (♂). Misidentification.]

[? *Phyciodes liriopae pastazena* (Bates); Röber, 1913: 435, pl. 89, row b, [fig. 4] (♂). Misidentification.]

Phyciodes liriopae guatemalena (Bates); Hall, 1929: 67.

Phyciodes (*Eresia*) *claudina guatemalena* (Bates); Forbes, 1945: 160, 189.

♂ forewing 16–17 mm, upperside orange-yellow, almost unmarked, apex slightly shaded black; hindwing with narrow dark marginal border in some specimens; underside with confused pale reddish striae. ♀ slightly larger, forewing upperside dark markings more complete.

Genitalia. ♂ tegumen wide, tapered rather abruptly to narrow scaphial extension, apex forked and expanded with spiny terminal bosses on each side, posterior border of juxta gently curved, saccus conical, entire or rarely apex slightly notched. ♀ not examined.

DISTRIBUTION. Guatemala, Mexico, Ecuador, Belize.

Tegosa anieta (Hewitson) **comb. n., stat. rev.**

(Figs 84–88, 349–356)

Eresia anieta Hewitson, [1864]: [23].

♂ forewing 14–15 mm, upperside orange-fulvous, costa, base and wing-borders black, oblique postdiscal bar variable, typically well developed but incomplete or even vestigial in many areas, subapical orange band, when defined, rather small, narrow, rarely partly divided; hindwing margin black, otherwise unmarked. ♀ upperside usually slightly paler, often with small submarginal yellowish spots in s5 and s6.

Genitalia. ♂ tegumen wide, abruptly tapered to a narrow neck and expanded again at apex, saccus single, posterior border of juxta almost straight, penis straight, slender, morula small. ♀ not examined.

Four subspecies.

Tegosa anieta anieta (Hewitson)

(Figs 84, 85, 349, 350, 351, 355, 356)

Eresia anieta Hewitson, [1864]: [23], pl. [12], figs 43, 44. LECTOTYPE ♂, VENEZUELA: Caraccas (BMNH, Type no. Rh. 8528; Gabriel, 1927: 14), here designated [examined].

Phyciodes anieta (Hewitson) Godman & Salvin, 1882: pl. 21, fig. 20 (♂); Röber, 1913: 435, pl. 89, row a [fig. 6], row b [fig. 5, 6].

Phyciodes liriopae anieta (Hewitson); Hall, 1929: 68.

Phyciodes (Eresia) claudina anieta (Hewitson); Forbes, 1945: 159, 189.

♂ upperside with all black markings well defined; forewing subapical orange band not divided; hindwing postdiscal black dots and vestiges of submarginal lunules often present.

Genitalia. As described above.

DISTRIBUTION. Panama, Costa Rica, Venezuela.

Tegosa anieta cluvia (Godman & Salvin)

(Figs 86, 352, 353)

Phyciodes cluvia Godman & Salvin, 1882: 198, pl. 21, figs 21, 22; Röber, 1913: 435; Hall, 1929: 70. LECTOTYPE ♂, GUATEMALA: Cerro Zunil (*Champion*) (BMNH, Type no. Rh. 8524; Gabriel, 1927: 32), here designated [examined].

Phyciodes liriopae f. *lirina* Röber, 1913: 435. Syntype(s), BOLIVIA (? MNHU, Berlin). **Syn. n.**

Phyciodes liriopae lirina Röber; Hall, 1929: 68; Forbes, 1945: 188, 190.

Phyciodes (Eresia) claudina cluvia Godman & Salvin; Forbes, 1945: 159, 189.

Like *T. anieta anieta* but upperside with all black markings extended; forewing subapical orange band reduced, often partly divided, discal fulvous area reduced; hindwing marginal black border wide.

Genitalia. As described above.

DISTRIBUTION. Guatemala, ? Bolivia.

Tegosa anieta luka **subsp. n.**

(Figs 87, 354)

[*Phyciodes liriopae flavia* (Godart); Röber, 1913: 435, pl. 89, row a [fig. 6] (♂). Misidentification.]

♂ upperside fulvous-yellow; forewing costa usually dark to postdiscal bar, the latter, although often extending only halfway across the wing and then tapering to a point, is variable and sometimes vestigial; hindwing underside often with darker marginal shade in s3 and s4. ♀ slightly larger, upperside dark markings often more extensive.

Genitalia. Compared with nominate *anieta*, the scaphial expansion may be slightly wider.

Holotype ♂, **Mexico**: Tamazunchale, San Luis Potosé, i.1963 (*E. C. Welling*) (genitalia slide no. 2596) (BMNH).

Paratypes. **Colombia**: 5 ♂ (genitalia slide nos. 1223, 2708, 839, 1224, 2709. **Mexico**: 1 ♀, same data as holotype. **Ecuador**: 2 ♂ (genitalia slide nos. 1068, 886). (All in BMNH.)

DISTRIBUTION. Mexico, Panama, Ecuador, Honduras, Belize, Costa Rica, Colombia, Peru. The most widely distributed form of *Tegosa* and often common.

Tegosa anieta serpia subsp. n.

(Fig. 88)

♂ forewing 15–16 mm, apex rounded, hindwing relatively small; upperside pale orange-fulvous, black markings not heavy; forewing oblique black postdiscal bar short; hindwing black margin well defined, underside postdiscal ocellar spots well marked in s1b, s1c, and in s2, bordered proximally by darker suffusion. ♀ not identified.

Genitalia. ♂ like *T. anieta anieta*.

Holotype ♂, **Peru**: Rio Chuchurras, R. Palcazu, 320 m (*W. Hoffmanns*) (genitalia slide no. 1070) (BMNH).

Paratype. **Bolivia**: 1 ♂, Cochabamba (*Germain*) (genitalia slide no. 2761) (BMNH).

DISTRIBUTION. Peru (Tarapoto), Bolivia (Cochabamba), W. Columbia?

DISCUSSION. *T. anieta*, in its various forms, is very widely distributed in the western mountains, especially in the form or subspecies *anieta luka*. The relationship of this phenotype remains rather uncertain, with the small difference in genitalia present in most specimens, but wing markings are variable and the transformation series to typical *anieta anieta* appears to be complete. *T. anieta serpia*, which shows quite striking features in wing-shape and markings, is perhaps specifically distinct, but with only 7 male specimens I think it is better included with *anieta* in the absence of more information about distribution.

Tegosa nazaria (Felder & Felder) comb. n., stat. rev.

(Figs 89, 357, 358)

Eresia nazaria Felder & Felder, 1867: 394. LECTOTYPE ♂, COLOMBIA: Bogotá (*Lindig*) (BMNH), here designated [examined].

Phyciodes mazaria; Kirby, 1871: 172. [Misspelling.]

Phyciodes nazaria (Felder & Felder); Röber, 1913: 439; Hall, 1929: 69, pl. 1, fig. 12 (♂).

Phyciodes aquila Hall, 1917: 162. 7 ♂ syntypes, COLOMBIA: El Baldio, 5400 ft [1750 m] (BM, Brighton) [examined].

Phyciodes (*Eresia*) *claudina nazaria* (Felder & Felder); Forbes, 1945: 159, 189.

♂ forewing 16 mm, upperside base broadly black, extending across cell, a small orange cell-spot present, black marginal borders wide, orange discal area extending from inner margin to v3, subapical orange band composed of 3 small spots; hindwing base and outer margin broadly black, vestigial submarginal lunules present. ♀ similar.

Genitalia. ♂ in dorsal view like *T. anieta*, scaphial extension wider, terminal spiny bosses small, saccus single with small apical notch.

DISTRIBUTION. Colombia.

Tegosa etia (Hewitson) comb. n., stat. rev.

(Figs 91, 92, 359, 360)

Eresia etia Hewitson, [1868]: [33], pl. [19], figs 56, 57. LECTOTYPE ♂, [BOLIVIA] ('Ecuador') (BMNH, Type no. Rh. 8526; Gabriel, 1927: 47), here designated [examined].

Eresia tissa Hewitson, 1869a: 27 [index]. LECTOTYPE ♂, ECUADOR: Mapoto (*Buckley*) (BMNH, Type no. Rh. 8517; Gabriel, 1927: 119), here designated [examined]. **Syn. n.**

Phyciodes etia (Hewitson) Röber, 1913: 445, pl. 90, row g [fig. 1].

Phyciodes etia selenoides Hall, 1928a: 11; Hall, 1929: 71, pl. 1, fig. 4 (♂). Holotype ♂, PERU: Cachapoyas (de Mathan) (BMNH) [examined]. **Syn. n.**

Phyciodes etia etia (Hewitson); Hall, 1929: 70.

Phyciodes etia tissa (Hewitson); Hall, 1929: 72.

Phyciodes (Eresia) claudina etia (Hewitson); Forbes, 1945: 159, 189.

Phyciodes (Eresia) claudina tissa (Hewitson); Forbes, 1945: 189.

Phyciodes (Eresia) claudina selenoides Hall; Forbes, 1945: 159, 189.

♂ forewing 14–15 mm, upperside with or without fulvous discal and subapical markings; underside fulvous markings replaced by paler yellow, forewing margins and all hindwing brown. ♀ similar.

The wing markings of this small species are very variable, with 3 named forms.

1. Fulvous markings present on upperside of forewing only, f. *etia*.
2. Markings present on hindwing, reduced on forewing, f. *selenoides*.
3. Markings present on uppersides of both wings, but partly obscured by dusky suffusion, f. *tissa*.

All forms occur, with intermediates, throughout the range.

Genitalia. ♂ like *T. nazaria*, scaphial extension of tegumen shorter and wider, saccus short with apical notch.

DISTRIBUTION. In the mountains of Ecuador, Bolivia and Peru.

Tegosa nigrella (Bates) comb. n., stat. rev.

(Figs 93, 94, 361–363)

Melitaea nigrella Bates, 1866: 133. LECTOTYPE ♂, GUATEMALA: central valleys (BMNH, Type no. Rh. 8521; Gabriel, 1927: 86), here designated [examined].

Phyciodes niveonotis Butler & Druce, 1872: 100; Godman & Salvin, 1882: 200; Röber, 1913: 441, pl. 90, row a [fig. 7] (♂). Holotype '♀' [♂], COSTA RICA: Cartago (*van Patten*) (BMNH, Type no. Rh. 8518; Gabriel, 1927: 87) [examined]. **Syn. n.**

Phyciodes lutescens Godman & Salvin, 1882: 199, pl. 21, fig. 26; Röber, 1913: 444. LECTOTYPE ♂, GUATEMALA: Purula (*Champion*) (BMNH, Type no. Rh. 8519; Gabriel, 1927: 76), here designated [examined]. **Syn. n.**

Phyciodes nigrella (Bates) Godman & Salvin, 1882: 199, pl. 21, fig. 24 (♂); Röber, 1913: 444, pl. 88, row i [fig. 8].

? *Phyciodes drusinilla* Röber, 1913: 441, pl. 90, row a [fig. 8]. Syntype(s), ARGENTINA (depository unknown).

Phyciodes nigrella nigrella (Bates); Hall, 1929: 73.

Phyciodes nigrella f. *lutescens* Godman & Salvin; Hall, 1929: 74.

Phyciodes nigrella niveonotis Butler & Druce; Hall, 1929: 74.

Phyciodes (Eresia) claudina nigrella (Bates); Forbes, 1945: 158–159, 189.

Phyciodes (Eresia) claudina niveonotis Butler & Druce; Forbes, 1945: 159, 189.

♂ forewing 14 mm, upperside black, markings white or yellow, large discal spot and small subapical spots; hindwing with coloured discal band on black ground. ♀ similar.

The wing markings vary in colour, with three named forms.

1. Markings more or less obscured by dusky suffusion, f. *nigrella*.
2. Upperside markings white, f. *niveonotis*.
3. Upperside markings yellow, f. *lutescens*.

Genitalia. Like *T. anieta*, small, with similar tegumen and scaphial extension raquet-shaped, posterior border of juxta gently convex, harpe almost straight. ♀ not examined.

DISTRIBUTION. Guatemala, Costa Rica (f. *niveonotis* only).

DISCUSSION. All forms of *T. nigrella* are rare; their distribution and relationships are not well understood. I have not seen any specimen which agrees with the figure of *Phyciodes drusinilla* Röber (1913: 441, pl. 90, row a [fig. 8]), described from Argentina, and included by Hall (1929: 73) as a possible synonym of *nigrella*.

ERESIA Boisduval

Eresia Boisduval, [1836]: pl. 11 [= pl. 7B], fig. 8. Type-species: *Nereis eunice* Hübner, by monotypy. Gender, feminine.

Butterflies of moderate size, forewings elongate, upperside markings very varied. In females the forewings are often more ample, apices more rounded, sometimes with striking sexual dimorphism. Astonishing mimicry is a prominent feature, with the genera *Eueides* Hübner, *Ceratinia* Hübner, and *Mechanitis* Fabricius the most frequent models, but a precise specific model is often difficult to establish, especially in western Brazil, N. Peru, Guatemala and Colombia, where many species of various families appear to be unstable. The genus is extensive and includes the largest species of the tribe.

Genitalia. In males the outstanding feature is the long scaphial extension which overhangs the valves like a roof (Fig. 383). Slight dorsal constrictions in the lateral margins represent the posterior limit of the 9th tergum (tegumen) in many species, beyond which the anal compartment is roofed by a curtain of delicate fibrous tissue, while the strongly chitinised lateral margins are continued to terminate on each side in a spiny area, forming a prominent boss when viewed from above. The oval valve tapers to a single terminal tooth, usually preceded by one or more smaller teeth upon the costal border. The medial border proximal to the apex usually bears bristles or fine, short spines, not visible in the small figures reproduced on the plates. In all species the sacculus is single, without any cleft or terminal notch; penis straight, sometimes massive, with a small ostium-keel. In dorsal view the female genitalia are sculptured to form a deep pit, from which arises a lightly chitinised cone representing the ductus bursae, surmounted by a cup-shaped bursal support. The post-vaginal scutum is not well developed.

LARVAL FOOD PLANT. *Fittonia* (Acanthaceae) is recorded for *E. eunice* by Hayward (1966).

DISTRIBUTION. The genus is widely distributed through Central and South America, from Mexico in the north, across the tropical regions to northern Argentina (*E. lansdorfi*), Bolivia and Peru. *Eresia eunice*, with its different modifications, is the most widely distributed species. In the eastern districts of Brazil, and in the Guyanas, it flies with six other species, *E. perna*, *E. lansdorfi*, *E. erysice* (excessively rare), *E. nauplius*, *E. plagiata* and *E. clara*. The remaining species, numbering about 30, are all restricted to Central America and to the countries of western South America, with a marked concentration of species in Colombia, Costa Rica, Venezuela and Peru.

DISCUSSION. Throughout the genus polymorphism is often confusing, and associating the sexes correctly may be difficult. In about half the known species the male genitalia do not show specific characters in a convincing manner and therefore are useless for specific definition. In several of the most variable species the status of certain phenotypes is uncertain; these are recorded here as subspecies in all doubtful cases. Specific characters of the male genitalia are probably constant, except in the case of *E. nauplius*, in which confusing variation has been observed.

Key to species of *Eresia* (males).

Note. It has not been practicable to include *E. coela* (p. 135), *E. mimas* (p. 138), *E. phaedima* (p. 143), *E. melaina* (p. 139), *E. anomala* (p. 141) and *E. etesia* (p. 146) in this key.

The species *E. datis* keys out twice.

- | | | |
|---|------------------------------------------------------------------------------------------|-----------------------------------|
| 1 | Hindwing upperside black with transverse band of white, yellow or fulvous | 2 |
| - | Hindwing not so marked | 12 |
| 2 | Band white or pale cream | 3 |
| - | Band yellow or fulvous | 7 |
| 3 | Veins crossing white band firmly lined with black | <i>leititia</i> (p. 133) |
| - | Veins crossing white band not prominent | 4 |
| 4 | Hindwing underside lacks brown basal stripe in s7 | <i>clara</i> (p. 131) |
| - | Hindwing underside brown basal stripe in s7 present | 5 |
| 5 | Forewing underside cell-base yellow-brown | <i>nauplius nauplius</i> (p. 132) |
| - | Forewing underside cell-base white or pale yellow | 6 |
| 6 | Hindwing upperside transverse white band 3 mm broad, posterior border concave | <i>plagiata</i> (p. 133) |
| - | Hindwing upperside transverse white band 4 mm broad, posterior border straight | <i>nauplius extensa</i> (p. 132) |

7	Hindwing upperside transverse band yellow	8
-	Hindwing upperside transverse band fulvous	10
8	Forewing extremely narrow	<i>perna</i> (p. 150)
-	Forewing of usual shape	9
9	Forewing upperside postdiscal area shaded brown	<i>lansdorfi</i> (p. 134)
-	Forewing upperside black, 3 yellow discal spots in oblique row	<i>polina</i> (p. 136)
10	Forewing upperside with wide longitudinal fulvous band from base to postdiscal area	<i>sestia</i> (p. 134)
-	Forewing not so marked	11
11	Hindwing upperside fulvous band tapered from costa to inner margin	<i>carne</i> (p. 135)
-	Hindwing upperside slightly or not at all tapered	<i>oblita</i> (p. 135)
12	Hindwing upperside disc yellow, crossed by black veins	<i>cissia</i> (p. 137)
-	Hindwing not so marked	13
13	Forewing upperside black, with or without small fulvous basal suffusion	14
-	Forewing not so marked	19
14	Forewing with broad yellow oblique discal band	15
-	Forewing not so marked	16
15	Forewing underside with pale submarginal spots	<i>margaretha</i> (p. 144)
-	Forewing underside without submarginal spots	<i>datis</i> (p. 143)
16	Forewing upperside with many white or yellowish spots, apex truncate	17
-	Forewing upperside markings similar, apex rounded	18
17	Forewing underside spots well defined	<i>sticta</i> (p. 140)
-	Forewing underside spots replaced by stripes	<i>nigripennis</i> (p. 141)
18	Hindwing underside space 8 completely white	<i>poecilina</i> (p. 139)
-	Hindwing underside pale basal mark very small (Note: markings variable, fulvous basal area of forewing extensive in some specimens.)	<i>ithomioides</i> (p. 140)
19	Forewing upperside fulvous, marked with 2 or 3 black oblique stripes	20
-	Forewing not so marked	21
20	Forewing proximal black stripe arises very near wing-base	<i>alsina</i> (p. 137)
-	Forewing proximal black stripe, sometimes incomplete, arises more distally	<i>eutropia</i> (p. 137)
21	Forewing fulvous, apex broadly black with prominent white mark in s4, s5 and s6	<i>emerantia</i> (p. 142)
-	Forewing not so marked	22
22	Wings partly translucent	23
-	Wings not so marked	24
23	Forewing basal and postdiscal black bands present	<i>datis</i> (p. 143)
-	Forewing lacking basal and postdiscal markings	<i>moesta</i> (p. 142)
24	Hindwing underside grey-brown, veins radiating, heavily scaled black	<i>actinote</i> (p. 150)
-	Hindwing not so marked	25
25	Hindwing upperside fulvous, with black transverse band	26
-	Hindwing not so marked	36
26	Forewing exceedingly narrow	<i>aveyrona</i> (p. 149)
-	Forewing of usual shape	27
27	Forewing apex truncate	<i>phillyra</i> (p. 148)
-	Forewing of usual shape, apex rounded	28
28	Forewing upperside fulvous basal area restricted to s2	<i>casiphia</i> (p. 147)
-	Forewing upperside fulvous basal area larger, including cell	29
29	Forewing upperside apex black	30
-	Forewing upperside apex not so marked	34
30	Forewing apical black area unmarked	31
-	Forewing apical area pale markings more or less developed	32
31	Forewing upperside black discal band reduced to 2 black spots	<i>pelonia</i> f. <i>pelonia</i> (p. 148)
-	Forewing upperside black discal band wide, prominent	<i>eunice esora</i> (p. 145)
32	Forewing upperside black discal band short, restricted to cell	<i>erysice</i> (p. 146)
-	Forewing not so marked	33
33	Forewing upperside with short black mark in cell, another mark at cell-end, yellow post-discal area extensive	<i>quintilla</i> (p. 138)
-	Forewing upperside postdiscal black band complete, reaching outer margin	34
34	Forewing upperside apical markings present, forming short, yellow band	<i>mechanitis</i> (p. 147)

- Forewing apical markings absent, rarely vestigial 35
- 35 Forewing upperside black markings well defined, oblique costal bar complete to outer margin
eunice eunice (p. 145)
- Forewing upperside black markings reduced, costal black bar incomplete *eunice olivencia* (p. 145)
- 36 Upperside black, with a blue discal band on forewing *levina* (p. 150)
- Upperside black, markings fulvous 37
- 37 ♂ forewing 27 mm; hindwing with wide fulvous area along distal margin *pelonia* f. *ithomiola* (p. 148)
- ♂ forewing 16 mm; fulvous discal mark on hindwing not extending to outer margin (upperside marking resembles *Telenassa teletusa*) *selene* (p. 151)

Eresia clara Bates sp. rev.

(Figs 177, 183, 184, 364–367)

[*Papilio nauplius* Linnaeus; Clerck, [1764]: pl. 46 [fig. 2]; Cramer, [1780]: 55, pl. 316, figs D–G. Misidentifications.]

[*Eresia clio* (Linnaeus); Doubleday, 1850: 184; Aurivillius, 1882: 172; Röber, 1913: pl. 92, row h [figs 1, 2]. Misidentifications.]

Eresia clara Bates, 1864b: 192. LECTOTYPE ♂, BRAZIL: Belem ('Para') (*H. W. Bates*) (BMNH, Type no. Rh. 8536; Gabriel, 1927: 32), here designated [examined].

[*Phyciodes clio* (Linnaeus); Kirby, 1871: 177; Röber, 1913: 446; Hall, 1929: 144. Misidentifications.]

Phyciodes clio estebana Hall, 1929: 146. Holotype ♂, VENEZUELA: San Esteban Valley, nr Puerto Cabello (ex *Hahnel*) (BMNH) [examined]. **Syn. n.**

Phyciodes clio reducta Hall, 1929: 146. Holotype ♂, ECUADOR: La Chima, Rio de las Juntas, pr. Bahahoyo, vi–vii. 1893 (*de Mathan*) (BMNH) [examined]. **Syn. n.**

[*Phyciodes (Eresia) clio* (Linnaeus); Forbes, 1945: 165–166, 189. Misidentification.]

♂ forewing 17–19 mm, upperside black, forewing with 4 well-defined white or yellowish spots; on hindwing upperside a white discal band of variable width; hindwing underside base narrowly white with broader white stripe below, above the white discal band. ♀ similar, usually slightly larger.

Genitalia. ♂, in dorsal view, tegumen wide, lateral shoulders well developed, posterior border of juxta gently convex, terminal bosses of scaphial extension small, spines not prominent; penis with large ostium-keel.

DISTRIBUTION. From S. Mexico through central and western South America to Peru and Bolivia, and in all the Amazon region, including the Guyanas, and southwards to western Mato Grosso.

DISCUSSION. External markings may be white or slightly yellowish; the extent of markings, especially that of the white transverse bar on the hindwing, may be slightly enlarged (*estebana*), or reduced in small specimens (*reducta*); the hindwing outer margin may be straight or gently convex. These variants appear to represent clinal phases with only minor taxonomic significance.

NOMENCLATURE NOTE. The name *Papilio clio* Linnaeus, used for this species by many authors, is based upon the figure by Merian (1705: pl. 35), and placed by Linnaeus in his group 'Heliconii', with *Papilio apollo*, etc. Merian's figure shows an Ithomiine, and was so recorded by Butler (1870: 126), possibly *Leucothyris aegle* (Fabricius) as later figured in 'Seitz' (pl. 38f). Confusion was introduced by Doubleday (1850: 184) when '*Papilio clio* L.(?)' was included in the list of species of *Eresia*, and again by Kirby (1871: 177) when he transferred *P. clio* L. to *Phyciodes* with the usual references, but now without the interrogation mark. Perhaps this incorrect identification led Aurivillius (1882) to introduce the name *clio* for the common *Phyciodes* species, as later accepted by Röber in 'Seitz', and by Hall. I imagine that Aurivillius never saw Merian's original figure, nor the paper by Bates (1864b), in which action was taken to give valid names to the two species figured as *nauplius* by Clerck and by Cramer.

Papilio clio was recorded by Linnaeus as a species represented in the collection of Queen Ludovica Ulrica, now preserved at Uppsala. I understand that there is no species in the collection today under this name, but there is a specimen of *Eresia clara* Bates under the name *P. nauplia* which corresponds in every way with the lower figure in Clerck ([1764]: pl. 46).

Eresia nauplius (Linnaeus) **comb. rev.**

(Figs 95, 96, 368–374)

Papilio nauplius Linnaeus, 1758: 488.*Eresia nauplia* (Linnaeus) Bates, 1864b: 192.

♂ forewing 20–22 mm, narrow, outer margin slightly concave; upperside grey-black with chalk-white markings like *E. clio* and additional small white submarginal mark in s3, s4; hindwing rather elongate, outer margin scalloped and fringes slightly chequered pale and dark; upperside with a broad white discal band extending from inner margin into s7; forewing underside grey with orange-brown and large white markings as on upperside; hindwing underside costa broadly white, divided by black-lined v8, followed by narrow brown and black stripes before the white discal band, then a white submarginal band divided into discrete lunules.

Genitalia. ♂, in dorsal view, variable, tegumen generally narrow, shoulders little developed (Fig. 369), lateral borders of scaphial extension straight or slightly divergent, terminal bosses well developed, rarely very large (Fig. 368) or otherwise modified (Fig. 370), posterior border of juxta prominent, penis slender, ostium-keel well developed. ♀ bursal duct chitinised, rather long, conical, bursal support cup-shaped, scutum well defined.

DISTRIBUTION. Brazil, the Guyanas.

Two subspecies, with similar genitalia.

Eresia nauplius nauplius (Linnaeus)

(Figs 95, 368–374)

Papilio nauplius Linnaeus, 1758: 488; Clerck, [1764]: pl. 46, fig. [1]. Syntype(s), [?SURINAM] ('In Indiis') (University of Uppsala).

Papilio nauplia Linnaeus; Linnaeus, 1767: 783; Aurivillius, 1882: 105.

[*Phyciodes clara* (Bates); Röber, 1913: 446, pl. 92, row h [fig. 5]. Misidentification.]

Phyciodes nauplia nauplia (Linnaeus); Hall, 1929: 147 [note: Hall's synonymy is in part erroneous]; Forbes, 1945: 165–6, 189.

Forewing underside cell-base orange-brown to round white cell-spot, with orange mark beyond; width of hindwing upperside white discal band about 3 mm.

DISTRIBUTION. Probably restricted to the Guyana shield, and Amazon region of Brazil.

Eresia nauplius extensa (Hall)

(Fig. 96)

Phyciodes nauplia extensa Hall, 1929: 148. Holotype ♂, BRAZIL: Chapada, Mato Grosso (*H. H. Smith*) (BMNH) [examined].

Phyciodes (Eresia) nauplia extensa Hall; Forbes, 1945: 166.

Like *E. nauplius nauplius*, but hindwing upperside white discal band about 4 mm wide; forewing underside cell-base white, sometimes fusing with round cell-spot; underside of both wings with white markings wider, more extensive.

DISTRIBUTION. Brazil: Mato Grosso (5 specimens), lower R. Madeira (1 specimen).

DISCUSSION. The six specimens in the BMNH show constant characters, and others in the Hall Coll. (BM, Brighton) are similar. Accepted by Prof. Keith Brown (pers. comm.) as a geographical subspecies, distributed from central Mato Grosso westwards.

E. nauplius has proved to be, taxonomically, the most difficult species of the genus. The external features appear to be well defined, but the male genitalia show marked variation in the shape of the dorsal structures and of the posterior border of the juxta, to an extent not seen in any other species. It may be that two or more species are present in the complex. Four figures of male genitalia are included to show the extent of variation found in a series of 14 preparations.

Eresia plagiata (Röber) comb. n., stat. n.

(Figs 97, 375–379)

Phyciodes nauplia plagiata Röber, 1913: 446; Hall, 1929: 148; Forbes, 1945: 166. ♀ syntype(s), PERU: upper Madre de Dios, 1500–3000 ft [500–1000 m] (*A. H. Fassl*) (depository unknown).
 [*Eresia nauplia* (Linnaeus); Röber, 1913: pl. 92, row h [fig. 5]. Misidentification.]

♂ forewing 23–24 mm, like *E. nauplius*; upperside white markings slightly larger; hindwing outer margin not scalloped, fringes brown, white discal band about 3.5 mm wide, rarely invades *s7*; forewing underside with cell white, fusing with white cell-spot, brown mark beyond vestigial, if present; hindwing underside markings as in *E. nauplius*, brown postdiscal line and white submarginal line both continuous, not lunulate as in *E. nauplius*. ♀ slightly larger, underside marginal markings better defined.

Genitalia. ♂ in dorsal view, tegumen wide, lateral walls of scaphial extension divergent, strongly chitinized, terminal bosses large, posterior border of juxta curved; penis slender; only minor variation has been seen. ♀ like *E. nauplius*, bursal duct perhaps shorter and wider (single preparation).

DISTRIBUTION. Brazil (including Amazon regions, Iquitos, Teffe etc.), Colombia (Florida), Peru (R. Chuchurras, La Merced), Ecuador. Not seen from the Guyanas, or lower Amazon.

Eresia letitia Hewitson comb. rev.

(Figs 98, 99, 380–384)

Eresia letitia Hewitson, 1869a: 24 [index].

Phyciodes letitia (Hewitson); Röber, 1913: 448.

♂ forewing 24 mm, outer margin gently convex, upperside black, markings white or pale grey; hindwing transverse discal band white or yellowish, submarginal striae flat. ♀ ground-colour yellow-brown or white (form *leucophaea*), forewing 26 mm or more, markings as in ♂, often enlarged.

Genitalia. Variable, see below.

DISTRIBUTION. Colombia, Ecuador, Peru.

Two subspecies with similar genitalia.

Eresia letitia letitia Hewitson

(Figs 98, 382, 384)

Eresia letitia Hewitson, 1869a: 24 [index]; Hewitson, [1870]: [38], pl. [21], figs 70, 75, 76; Röber, 1913: pl. 91, row a [fig. 3]. LECTOTYPE ♀, ECUADOR: St. Inez, Buckley (BMNH, Type no. Rh. 8538; Gabriel, 1927: 73), here designated [examined].

? *Eresia leucophaea* Weymer, 1890: 54. ♀ syntypes, ECUADOR (? MNHU, Berlin).

Phyciodes letitia letitia (Hewitson); Hall, 1929: 149; Forbes, 1945: 165.

♂ upperside markings well defined, hindwing transverse white band 4 mm wide in specimens from Colombia, slightly narrower in those from Ecuador.

Genitalia. ♂ tegumen wide, lateral shoulders prominent in three examples from Colombia, scaphial extension wide in two specimens but narrower in a third specimen.

DISTRIBUTION. Colombia, Ecuador (hindwing upperside white discal band often narrower).

Eresia letitia ocellata (Röber) stat. rev.

(Figs 99, 380, 381, 383)

Phyciodes letitia ocellata Röber, 1913: 448. Syntype(s), PERU: Chanchamayo (depository unknown).

Eresia neptoides Rosenberg & Talbot, 1914: 675. Holotype ♂, PERU: El Porvenir, 900 m, April 1908 (BMNH) [examined].

Eresia letitia nigra Rosenberg & Talbot, 1914: 676. Holotype ♂, PERU: Huancabamba, Cerro del Pasco (BMNH) [examined]. Syn. n.

[*Phyciodes leucophaea* (Weymer); Röber, 1913: 448. Misidentification.]

[*Eresia leucophaea* Weymer; Röber, 1913: pl. 91, row a [fig. 4]. Misidentification.]

Phyciodes letitia nigra (Rosenberg & Talbot); Hall, 1929: 150; Forbes, 1945: 165.

Phyciodes letitia nigra f. *leucophaeoides* Hall, 1929: 151. Holotype ♀, PERU: Chanchamayo (BM, Brighton).

Phyciodes ocellata Röber; Hall, 1929: 151; Forbes, 1945: 165; 189.

♂ upperside darker, pale markings suffused with dark scales; hindwing upperside pale transverse band narrow, 2.5 mm, widest at centre, white or yellowish.

Genitalia. Of five preparations, the lateral shoulders of the tegumen are prominent in three, but in two examples they do not project laterally; scaphial extensions wide, or narrower and longer (Fig. 381).

DISTRIBUTION. Peru, in which it appears to be rather widely distributed. The nominate form has not been seen from this region.

DISCUSSION. Specimens with discal band yellowish on upperside of the hindwing are typical of *ocellata*, later named *neptoides* by Rosenberg & Talbot. In the *neptoides* type-series, seven specimens all from El Porvenir in Peru, the outer margin of the hindwing is straight.

Eresia lansdorfi (Godart) **comb. rev.**

(Figs 100, 385)

Heliconia lansdorfi Godart, 1819: 209. Syntype(s), BRAZIL (depository unknown).

Melinaea langsdorfii (Godart) Hübner, [1821–1822]: pl. [68], figs 389, 390; 1823: 31.

Heliconia langsdorfii Godart; Godart, [1824]: 806.

Phyciodes lansdorfi (Godart) Staudinger, 1885: 92, pl. 36 (♂); Röber, 1913: 448; Hall, 1929: 154; Forbes, 1945: 162, 164, 189; Hayward, 1964b: 338, pl. 18, fig. 12.

Eresia lansdorfi (Godart) Röber, 1913: pl. 92, row a [figs 1, 2].

Phyciodes lansdorfi f. *jacinthica* Röber, 1913: 448, pl. 90, row k [fig. 6]. LECTOTYPE ♀, BRAZIL: San Jacintho, Theophilo Ottoni, Minas Geraês (*F. Birch*) (BMNH), here designated [examined].

Phyciodes lansdorfi f. *veternosa* Ferreira d'Almeida, 1922: 181. Holotype ♀, BRAZIL: Jacarépaguá (*Tanque*) (depository uncertain).

Phyciodes lansdorfi ♀ f. *sulphurata* Zikán, 1937: 386. Holotype ♀, BRAZIL: 'Südabhang des Itatiaya, 700 m., 27th December' (depository uncertain).

Phyciodes lansdorfi (Latreille); Hayward, 1952: 290.

♂ forewing upperside black, obscure basal stripe yellowish, post-discal area light red-brown, including costal bar; hindwing upperside black, transverse band pale yellow. ♀ variable, usually like ♂, but in some areas (form *jacinthica*) forewing upperside basal stripe well defined, light brown, and hindwing upperside submarginal lunules present in s1b–s4. More rarely upperside forewing red-brown markings more or less replaced by yellow (? f. *sulphurata*).

Genitalia. ♂ distinctive, tegumen wide, shoulders not defined, lateral walls of scaphial membrane chitinised, diverging, terminal bosses small, posterior border of wide juxta almost straight, harpes short, tapering. ♀ not examined.

DISTRIBUTION. Brazil (from Espírito Santo and Bahia southwards through Parana to Rio Grande do Sul), N. and C. Argentina, Paraguay, Uruguay (and Peru?).

Eresia sestia Hewitson **comb. rev.**

(Figs 101, 102, 386, 387)

Eresia sestia Hewitson, 1869a: 26 [index]; Hewitson, [1870]: [37], pl. [21], figs 68, 69, 74; Fassl, 1912: 122.

LECTOTYPE ♂, ECUADOR: Jorge (*Buckley*) (BMNH, Type no. Rh. 8548; Gabriel, 1927: 109], here designated [examined].

Phyciodes sestia (Hewitson) Röber, 1913: 446, pl. 90, row g [fig. 9], row h [figs 1, 2].

Phyciodes saturata Röber, 1913: 446, pl. 90, row h [fig. 3] [valid name?—apparently proposed in synonymy of *P. sestia* (Hewitson)]. LECTOTYPE ♀, ECUADOR: 'Cachabé, low c., xi. 1896, ex *Rosenberg*' (BMNH), here designated [examined].

Phyciodes sestia sestia (Hewitson); Hall, 1930: 171; Forbes, 1945: 170.

Phyciodes sestia sestia ♀ f. *satura* Röber; Hall, 1930: 172; Forbes, 1945: 170.

♂ forewing 23–24 mm, upperside black with fulvous markings in a pattern very like *E. letitia* ♀, a curved longitudinal streak from wing-base to s2 prominent. ♀ wings broader, postdiscal markings white, discal markings as in ♂, cream-yellow or fulvous (f. *saturata*).

Genitalia. ♂, in dorsal view, tegumen shoulders not prominent, scaphial extension rather narrow but spiny terminal bosses well defined, posterior border of juxta prominent, saccus slender, harpe slender, almost straight. ♀ not examined.

DISTRIBUTION. Ecuador (also recorded from Colombia by Hall, 1929: 172).

Eresia coela Druce **comb. rev., stat. rev.**

(Figs 103, 104, 388, 389)

Eresia coela Druce, 1874b: 37; Godman & Salvin, 1882: 187, pl. 21, figs 2, 3; Schaus, 1913: 344, pl. 50, fig. 8; Röber, 1913: p. 91, row c [fig. 4]. LECTOTYPE ♀ (♂?), COSTA RICA: Limon (BMNH, Type no. Rh. 8550, Gabriel; 1927: 33), here designated [examined].

Phyciodes coela (Druce) Röber, 1913: 444.

Phyciodes sestia coela (Druce); Hall, 1930: 172; Forbes, 1945: 170.

♂ forewing 22 mm, like *E. sestia*, upperside black, markings fulvous; hindwing upperside fulvous discal band wider, submarginal spots not prominent; hindwing underside discal band terminating before black marginal border, submarginal spots small, discrete and well defined. ♀ forewing 23–25 mm, broad, apex rounded, upperside black, markings white as in *E. sestia* but lacking basal coloured area; hindwing fulvous discal field larger, otherwise as in *E. sestia*.

Genitalia. ♂ tegumen wide, shoulders defined, scaphial extension narrow, spiny bosses not well formed, posterior border of juxta slightly prominent, saccus narrow, posterior section of valve slender, harpes slender, almost straight. ♀ with rami of the bursal support unusually large.

DISTRIBUTION. Costa Rica, coastal regions (Schaus).

NOTE. I have examined 5 ♀ in the BMNH, and 2 ♂ and 1 ♀ in the Hall Coll. (BM, Brighton).

Eresia oblita (Staudinger) **comb. rev., stat. rev.**

(Figs 105, 390)

Phyciodes oblita Staudinger, 1885: 93; Röber, 1913: 446. 1 ♂, 6 ♀ syntypes, VENEZUELA: Puerto Cabello (MNHU, Berlin).

Eresia oblita (Staudinger); Röber, 1913: pl. 92, row d [fig. 5].

Phyciodes carme oblita Staudinger; Hall, 1929: 141; Forbes, 1945: 164.

♂ forewing 21 mm, upperside dark brown, markings fulvous yellow, large spots in oblique row as in *E. polina*, additional spots in cell and a costal bar less prominent; hindwing upperside discal bar 4–5 mm wide at cell, tapering slightly to inner margin, narrow post-discal and *submarginal lunules well defined*; forewing underside markings similar, paler; hindwing underside markings like *E. polina* but submarginal band orange with black proximal border. ♀ similar, slightly larger.

Genitalia. ♂ tegumen in dorsal view rather narrow, shoulders not prominent, scaphial bosses large, spines numerous, posterior border of juxta gently convex. ♀ not examined.

DISTRIBUTION. Venezuela (San Esteban Valley) (Hall, 1929: 141 erroneously indicates Staudinger's material as coming from Colombia).

Eresia carme Doubleday **comb. rev.**

(Figs 106–108, 391–393)

Eresia carme Doubleday, [1847]: pl. 20.

Phyciodes carme (Doubleday) Staudinger, 1885: 93.

♂ forewing 20–23 mm, upperside dark brown, markings fulvous, large spots in s1b–s2, and in s4 in an oblique series; hindwing upperside discal band usually tapers sharply to inner margin, white or pale in

s1a-s1c; underside hindwing and forewing markings yellow-buff, usually gleaming. ♀ larger, forewing upside with additional postdiscal costal mark, spots yellow, hindwing fulvous discal band wider.

Genitalia. See below.

DISTRIBUTION. Venezuela and Colombia.

Two subspecies, genitalia probably differ slightly.

Eresia carme carme Doubleday

(Figs 106, 107, 391, 392)

Eresia carme Doubleday, [1847]: pl. 20, fig. 5; [1848]: 183. LECTOTYPE ♀, VENEZUELA (BMNH, Type no. Rh. 8541; Gabriel, 1927: 26), here designated [examined].

Phyciodes carme (Doubleday); Staudinger, 1885: 93; Röber, 1913: 446.

Phyciodes carme carme (Doubleday); Hall, 1929: 140; Forbes, 1945: 164.

♂ forewing upperside fulvous markings scanty, post-discal spot in s1b quadrilateral, spot in s2 similar but displaced slightly distad, spot in s4 similar, spot in s5 and costal markings vestigial.

Genitalia. ♂, in dorsal view, tegumen wide, shoulders variable, scaphial extension short, terminal spines large but bosses not well defined, posterior border of juxta gently curved, saccus tapering; penis robust, ostium-keel small.

DISTRIBUTION. Venezuela, Colombia (?).

Eresia carme laias Godman & Salvin, **comb. rev.**

(Figs 108, 393)

Eresia laias Godman & Salvin, 1879: 151, pl. 14, fig. 1. LECTOTYPE ♂, COLOMBIA: Frontino, Antioquia (T. K. Salmon) (BMNH, Type no. Rh. 8542; Gabriel, 1927: 70), here designated [examined].

Phyciodes laias (Godman & Salvin) Röber, 1913: 446, pl. 90, row g [figs 7, 8].

Phyciodes laias lycus Hall, 1928a: 12; Hall, 1929: 144. Holotype ♂, COLOMBIA: Rio Aguaca Valley (BM, Brighton) [examined]. **Syn. n.**

Phyciodes laias laias (Godman & Salvin); Hall, 1929: 143.

Phyciodes (Eresia) carme laias (Godman & Salvin); Forbes, 1945: 164.

Phyciodes (Eresia) carme lycus Hall; Forbes, 1945: 164.

♂ like *carme carme* but forewing upperside markings differ slightly; fulvous postdiscal spots in s1b + s2 + s3 united to form an elongate macule, spot in s5 and small submarginal spots in s3 and s4 all well defined (3 specimens); markings may be extended by a cell-spot and a postdiscal costal spot, both well defined (form *lycus*). ♀ unknown.

Genitalia. ♂, in dorsal view, like *carme carme* but posterior section of valve very slender (*E. carme laias (lycus)*, single preparation).

DISTRIBUTION. W. Colombia.

DISCUSSION. *E. carme* is a rare species, not well represented in the BMNH. *E. laias* was described as an independent species, with *lycus* as a subspecies. I have followed Forbes and retained *laias* as a subspecies of *carme*, but it seems more likely that it simply represents a local form of minor taxonomic importance. The BMNH includes three specimens of *laias* and two specimens sufficiently well marked to be placed as f. *lycus*. The additional markings can often be seen, vaguely outlined, on normal ♀ specimens of *carme*. The underside wing-markings show close relationship to *E. polina* (included by Forbes as a subspecies of *carme*).

Eresia polina Hewitson **comb. rev., stat. rev.**

(Figs 109, 394, 395)

Eresia polina Hewitson, [1852]: [60], pl. [30], fig. 6. LECTOTYPE ♂, ECUADOR: 'Quito' (BMNH, Type no. Rh. 8540; Gabriel, 1927: 98), here designated [examined].

Eresia encina Felder & Felder, 1861: 103. LECTOTYPE ♂, ECUADOR (BMNH), here designated [examined]. [Specimen bears Felders' original determination label.]

Phyciodes polina f. *intermedia* Röber, 1913: 446, pl. 92, row g [fig. 5]. ♂ syntype(s), BOLIVIA (depository unknown).

Phyciodes polina (Hewitson) Staudinger, 1885: 93; Röber, 1913: 445; Hall, 1929: 142.

Phyciodes (Eresia) carne polina (Hewitson); Forbes, 1945: 164.

♂ forewing 27–28 mm, upperside black with 3 large yellow spots placed obliquely in s1b, s2 and s4, discoidal and costal markings vestigial; on hindwing a wide yellow transverse band tapering slightly to inner margin; underside forewing base fulvous, additional yellow spots at cell-end, on costa beyond cell and small apical markings; hindwing underside pale yellow, gleaming, veins brown, and basal, sub-basal, post-discal and submarginal stripes brown, the last proximally bordered black and wide. ♂ similar, yellow markings often enlarged.

Genitalia. ♂ organs large, in dorsal view tegumen strongly chitinised, scaphial extension short, terminal bosses large with prominent spines, juxta with posterior border gently curved, harpes slender, almost straight. ♀ not examined.

DISTRIBUTION. Colombia, Ecuador, Peru, Bolivia.

Eresia alsina Hewitson **comb. rev.**

(Figs 110, 111, 396–398)

Eresia alsina Hewitson, 1869b: 33; Hewitson, [1870]: [35], pl. [20], figs 62, 63; Godman & Salvin, 1882: 186; 1901: 671. LECTOTYPE ♀, NICARAGUA: Chontales (*T. Belt*) (BMNH, Type no. Rh. 8552; Gabriel, 1927: 10), here designated [examined].

Phyciodes alsina (Hewitson); Röber, 1913: 448, pl. 90, row k [fig. 5]; Hall, 1930: 174; Forbes, 1945: 169, 189.

[*Eresia heliconina* Röber; Röber, 1913: pl. 91, row a [fig. 2] (♂). Misidentification.]

[*Phyciodes (Eresia) eutropia* Hewitson; Young, 1973: 87. Misidentification.]

♂ forewing 25–26 mm, upperside orange-fulvous, wing margins black, 3 very oblique black bars, proximal bar narrow, tapering to a single line as it meets the outer margin, apical markings and marginal spots yellowish. ♀ larger, forewing 28–29 mm, wider, apex more rounded, markings similar.

Genitalia. ♂ like *E. eunice*, tegumen short, in dorsal view shoulders well defined, lateral walls of scaphial extension slightly divergent, terminal spiny bosses rounded, posterior border of juxta almost straight, saccus wide, tapering. ♀ like *E. eunice* (not figured).

DISTRIBUTION. Nicaragua, Costa Rica.

BIOLOGY. Young (1973) describes the early stages, host plant, mimicry and other aspects of the biology of what appears to be this butterfly, under the name *eutropia* Hewitson.

Eresia cissia (Hall) **comb. n., stat. n.**

(Figs 112, 399–401)

Phyciodes ithomioides cissia Hall, 1928a: 12; Hall, 1930: 181, pl. 2, fig. 5 (♂); Forbes, 1945: 169.

Holotype ♂, COLOMBIA: Juntas, Cauca Valley (*de Mathan*) (BMNH) [examined].

♂ forewing 25 mm, apex rounded, compared with *E. ithomioides* by Hall, but upperside ground-colour yellow, forewing markings more regular, basal area yellow, with black postdiscal costal bar followed by small yellow postdiscal and submarginal markings; hindwing base and discal area yellow, series of yellow submarginal spots regular, enclosed in wide black marginal band. ♀ not examined.

Genitalia. ♂ in dorsal view, tegumen short, shoulders prominent, terminal bosses with a few large spines but not really well defined, posterior border of juxta straight, saccus wide, tapering rapidly to pointed apex; penis as in Fig. 401.

DISTRIBUTION. Colombia (Cauca Valley, Juntas (2 ♂)).

Eresia eutropia Hewitson **comb. rev.**

(Figs 113, 114, 402)

Eresia eutropia Hewitson, 1874b: 56. LECTOTYPE ♂, PANAMA: Santa Fé (BMNH, Type no. Rh. 8553; Gabriel, 1927: 48), here designated [examined].

[*Phyciodes eutropia* (Hewitson); Godman & Salvin, 1882: 187, pl. 21, fig. 1; Röber, 1913: 447; Hall, 1930: 175; Forbes, 1945: 169–70, 189. Misidentifications: all referred to *E. melaina*.]

♂ forewing 22–24 mm, outer margin slightly excavate, upperside black, markings pale yellow or white, much of s1b and lower half of cell fulvous, but inner margin black, oblique discal band yellow or white, irregular, broken into spots by black veins, spot at base of s3 out of line, postdiscal band usually somewhat irregular, spot in s4 more or less divided, submarginal spots small; hindwing upperside fulvous, costa and outer margin black, series of submarginal spots complete from s1c–s7; underside markings enlarged, often confluent; hindwing costa black. ♀ forewing 27 mm, wide, apex rounded, outer margin convex, markings as in ♂, submarginal spots well developed, hindwing underside submarginal spots white.

Genitalia. ♂ tegumen rather wide in dorsal view, shoulders developed, lateral walls of scaphial extension slightly divergent, terminal bosses not well defined, spines large, posterior border of juxta prominent, saccus tapering. ♀ not examined.

DISTRIBUTION. Panama, W. Colombia.

NOTE. This species was incorrectly identified by Godman & Salvin, Röber, Hall and Forbes; their descriptions and figures refer to the new species described below under the name *melaina*.

Eresia mimas (Staudinger) **comb. n., stat. rev.**

(Figs 116, 174)

Phyciodes mimas Staudinger, 1885: 93; Röber, 1913: 448. ♂, ♀ syntypes, COLOMBIA: Rio San Juan (*E. Troetsch*) (? MNHU, Berlin; BM, Brighton) [♂ syntype in BM, Brighton, examined].

Phyciodes alsina subfasciata Röber, 1913: 448, pl. 92, row c [fig. 3] (as *mimas*). Syntype(s), COLOMBIA (depository unknown). **Syn. n.**

Phyciodes eutropia subfasciata Röber; Hall, 1930: 177; Forbes, 1945: 170.

Phyciodes eutropia mimas Staudinger; Hall, 1930: 178; Forbes, 1945: 170.

♂ forewing 26 mm, like *E. eutropia*, but differs on forewing upperside, postdiscal (subapical) band regular, crossed by v5 and v6, slightly curved and continued by enlarged submarginal spot in s3 (perhaps variable), black mark in mid-cell terminates abruptly at median vein, inner margin not black, pale submarginal spots vestigial or absent. ♀ not identified (Hall, 1930: 178, records 1 ♀ in BMNH).

Genitalia. Not examined.

DISTRIBUTION. W. Colombia (R. San Juan).

DISCUSSION. Röber appears to have been confused about the identity of *mimas*, of which the type-locality is not Rio Dagua as he states. His name *subfasciata* is accepted here for the figure on his pl. 92, row c [fig. 3], which shows nominate *mimas*. There is a single specimen in BMNH and two specimens in Hall Coll., all ex Staudinger, one of the latter recorded as a 'co-type' (Hall, 1930: 178), and all labelled Rio San Juan. The phenotype is easily recognisable, the markings constant, clearly related to *E. eutropia*, which also occurs in Colombia. No specimen is available for dissection.

Eresia quintilla Hewitson **comb. rev., stat. rev.**

(Figs 122, 403, 404)

Eresia quintilla Hewitson, [1872]: [30], pl. [15], fig. 83. LECTOTYPE ♀, ECUADOR (*Buckley*) (BMNH, Type no. Rh. 8554; Gabriel, 1927: 102), here designated [examined].

Phyciodes quintilla (Hewitson) Röber, 1913: 447, pl. 90, row i [fig. 2].

Phyciodes eutropia quintilla (Hewitson); Hall, 1930: 178; Forbes, 1945: 170.

♂ like *E. mimas* but forewing upperside discal and post-discal markings bright yellow, fused and expanded to enclose the short postdiscal costal mark at cell-end, subapical orange band absent and submarginal pale spots present, especially well defined at wing apex; hindwing underside with or without black basal shade in s7. ♀ similar, usually slightly larger.

Genitalia (single preparation). ♂ tegumen wide, tapering, shoulders well defined, scaphial extension lateral

walls not diverging, terminal bosses with large spines, posterior border of juxta gently convex, saccus tapering, harpes slightly sinuous (slide no. 2576). ♀ with usual generic characters, bursal support well defined.

DISTRIBUTION. Ecuador.

Eresia poecilina Bates comb. rev., stat. rev.

(Figs 115, 121)

Eresia poecilina Bates, 1866: 133; Godman & Salvin, 1882: 188, pl. 20, figs 19, 20 [lectotype].

LECTOTYPE ♀, PANAMA: Veragua, Santa Fé (*Arcé*) (BMNH, Type no. Rh. 8566; Gabriel, 1927: 98), here designated [examined].

Phyciodes poecilina (Bates) Röber, 1913: 448.

Phyciodes ithomioides poecilina (Bates); Hall, 1930: 181; Forbes, 1945: 169.

Phyciodes eutropia confirmans Hall, 1930: additional page. Holotype ♂, COSTA RICA (*A. G. M. Gillott*) (BMNH) [examined]. Syn. n.

♂ upperside black, markings white or yellowish, forewing 26 mm, a short red basal flush present, 3 pale spots in s2, basal and submarginal spots in s3, oval spot in cell, 2 spots in s4 (an additional basal spot may be present), 3 spots in s5, series of small submarginal spots complete from s1b-s8; hindwing upperside orange-red, costa and outer margin black, tapering to anal angle, with prominent white submarginal spots in s6 and s7; underside forewing spots similar, slightly larger. ♀ forewing wider, markings slightly larger but arrangement similar, hindwing submarginal white spots in complete series; hindwing underside often with disk flushed grey-blue (absent in lectotype).

Genitalia. Not examined.

DISTRIBUTION. Panama (Santa Fé, Chiriqui, Laguna River), Costa Rica.

DISCUSSION. The postdiscal spots grouped together in s1b + s2 and in s4 + s5 form a useful character. The area between the postdiscal costal bar and the apical submarginal spots is unmarked. I have examined 1 ♂, 3 ♀ in the BMNH, and 1 ♂, 1 ♀ in the Hall coll. (BM, Brighton). Both males and 3 ♀ show the blue-grey, slightly vitreous ('violaceous-grey') suffusion on the hindwing underside referred to by Hall in his description of *confirmans*; this does not appear in the ♀ lectotype of *poecilina*, although this looks identical in all other respects.

Eresia melaina sp. n.

(Figs 117, 118)

[*Eresia eutropia* Hewitson; Godman & Salvin, 1882: 187, pl. 21, fig. 1 (♂); Röber, 1913: pl. 92, row b [fig. 5] (♂). Misidentifications.]

[*Eresia dimorphina* Butler; Godman & Salvin, 1882: 187, pl. 20, figs 17, 18 (♀). Misidentification.]

[*Phyciodes eutropia* (Hewitson); Röber, 1913: 447. Misidentification.]

[*Phyciodes eutropia eutropia* (Hewitson); Hall, 1930: 176; Forbes, 1945: 170. Misidentifications.]

Phyciodes eutropia eutropia ab. *nivifera* Hall, 1930: 177. Syntypes 4 ♀, PANAMA, COLOMBIA (BMNH) [examined].

♂ forewing 25-26 mm, upperside black, with scanty yellowish markings, a fulvous flush below cell in s1b, pale mark near cell-end usually elongate, followed by a small spot at base of s3, post-discal spots in s2 and s4 prominent, isolated, forming a useful specific character, postdiscal bar from costa to s4, submarginal spots small, often indistinct but series usually complete from s1b-s8; hindwing upperside fulvous, costa black, continued narrowly along outer margin, enclosing white spots in s6 and s7; underside markings similar. ♀ similar, upperside markings yellowish or white, slightly enlarged; forewing base of cell and much of s2 fulvous but base of s3 black; hindwing black marginal border wider, series of submarginal spots complete, a faintly yellow flush often present internal to marginal border in s5.

Genitalia. Not examined.

Holotype ♂, Panama: Veraguas (*Arcé*), ex Godman & Salvin Coll. (BMNH).

Paratypes. Panama: 1 ♀, same data as holotype; 2 ♀, Santa Fé (*Arcé*); 2 ♀, Lion Hill (*McLeannan*) (BMNH). Colombia: 1 ♀ (BMNH).

DISTRIBUTION. Panama (Veragua, El Valle, Santa Fé), Colombia.

NOTE. No male specimen is available for dissection. The ♂ figured by Godman & Salvin and erroneously named *eutropia* was accepted as 'type' by Röber and later by Hall, which has led, for many years, to confusion in identification of these species. This specimen is now fixed as the holotype of *melaina*.

Eresia sticta Schaus comb. rev., stat. rev.

(Figs 119, 405)

Eresia sticta Schaus, 1913: 344, pl. 50, fig. 7. ♂, ♀ syntypes, COSTA RICA (? BMNH) [identity of these types not confirmed].

[*Eresia coela* Druce; Röber, 1913: pl. 91, row c [fig. 5] (♀). Misidentification.]

Phyciodes sticta (Schaus) Röber, 1924: 1030, pl. 192, row h [fig. 4] (♂).

Phyciodes ithomioides sticta (Schaus); Hall, 1930: 181; Forbes, 1945: 169.

♂ forewing 26–27 mm, narrow, apex elongate, slightly truncate, upperside black with white markings consisting of small spots; a prominent spot over discoidal vein and many spots in postdiscal and submarginal areas; hindwing upperside orange-red, costa and inner margin broadly black, margin tapering in anal angle; underside similar, but hindwing black borders extended and series of white submarginal spots complete. ♀(?) larger, forewing 30 mm, wide, apex rounded.

Genitalia. ♂ tegumen short, wide, scaphial bosses not well defined, posterior border of juxta gently curved (slide no. 1023).

DISTRIBUTION. Costa Rica, ? Colombia (Hall, 1930: 182).

DISCUSSION. In my opinion, the ♀-form attributed to this species by Hall may be incorrectly placed. The species seems to be rare; 2 ♂ in BMNH, 1 ♂ in Hall Coll. (BM, Brighton). The fate and identity of Schaus' original syntypes are uncertain; a pair from Carillo in the BMNH, collected in February (the female certainly by Schaus) may represent the original material, described from specimens in the BMNH.

Eresia ithomioides Hewitson comb. rev.

(Figs 120, 124, 124a, 406, 407)

Eresia ithomioides Hewitson, [1864]: [18].

Phyciodes ithomoides [sic] (Hewitson) Röber, 1913: 448.

♂ forewing 28–29 mm, narrow, apex rounded, outer margin straight, markings consisting of white or yellow spots in discal and postdiscal areas; hindwing oval, disc fulvous, black outer margin enclosing pale submarginal spots; hindwing underside with black basal mark in s7, black marginal border extended along v7. ♀ differs, larger, forewing 36 mm, broad, apex rounded; upperside markings as in ♂ but spots larger; hindwing upperside orange-fulvous, submarginal spots obscure in wider dark border; underside black borders wide, series of submarginal spots prominent and complete (described from single specimen in BMNH).

Genitalia. ♂ organs wide, tegumen short, in dorsal view scaphial bosses not well defined, posterior border of juxta wide, gently convex, base of saccus wide; penis in side view slender, ostium-keel prominent.

DISTRIBUTION. Colombia, ? Panama.

Two subspecies.

Eresia ithomioides ithomioides Hewitson

(Figs 120, 124a)

Eresia ithomioides Hewitson, [1864]: [18], pl. [9], fig. 20. LECTOTYPE ♂, COLOMBIA: 'New Granada', Bogotá (*E. Birchell*) (BMNH, Type no. Rh. 8565; Gabriel, 1927: 66), here designated [examined].

Phyciodes ithomoides [sic!] (Hewitson); Röber, 1913: 448, pl. 90, row k [fig. 2].

Phyciodes ithomioides ithomioides (Hewitson); Hall, 1930: 179; Forbes, 1945: 169.

♂ upperside forewing base black; hindwing fulvous discal area reduced by extension of black marginal border, rarely entirely black.

DISTRIBUTION. Colombia.

Eresia ithomioides pseudocelemina (Strand) stat. n.

(Fig. 124)

Phyciodes pseudocelemina Strand, 1916: 6, pl. 16, fig. 13. Holotype ♂, COLOMBIA (BMNH) [examined].

Phyciodes ithomioides ithomioides ♂ f. *pseudocelemina* Strand; Hall, 1930: 180.

♂ differs from nominate form: forewing upperside base and discoidal cell bright fulvous; hindwing fulvous area extending to black marginal border, black extension along v7 variable, sometimes vestigial; hindwing underside black mark in s7 reduced.

DISTRIBUTION. Colombia (Magdalena Valley, May (*C. Allen*); 5 ♂ in BMNH).

DISCUSSION. The BMNH has two males of the nominate form, and five males of *pseudocelemina*, all from Colombia, and it may be that they represent a simple cline, but with so little material it is not possible to be sure of the best taxonomic rank. There is a single ♂ in the Hall Coll. (BM, Brighton).

The *Eresia* species *poecilina*, *sticta*, *ithomioides* and *melania* form a difficult group. It is especially difficult to assemble the females with the appropriate male. The arrangement adopted here may need revision when more material is available. The species are all rare, poorly represented in collections, most often by single specimens taken at long intervals by different collectors, in various localities. I have accepted the precise arrangement of spots on the upperside of the forewing as the most reliable character for definition of species and for association of sexes. It seems possible that one or more of the females may be polymorphic, but I have had to describe as a distinct species (*anomala*) one well-known but previously unnamed ♀ form, for which I have not been able to identify a male.

Eresia anomala sp. n.

(Fig. 123)

[*Phyciodes ithomioides* (Hewitson); Röber, 1913: 447, pl. 90, row k [figs 3, 4] (♀, as *Eresia* on pl.).

Misidentification.]

[*Phyciodes ithomioides ithomioides* (Hewitson); Hall, 1930: 180 (♀ only). Misidentification.]

♀ forewing 30 mm, upperside dark grey-brown, markings yellowish spots arranged as in *E. poecilina* but spot at base of s2 constantly absent, postdiscal spot in s2 well separated from submarginal spot; hindwing upperside dark grey-brown, series of submarginal spots yellowish, large, complete, a slightly variable fulvous flush extending along inner margin and across s2, a postdiscal series of yellow, rectangular marks present in s2-s5. All markings similar on underside.

Holotype ♀, Colombia: Muzo, 1924 (*Apollinar Maria*) (ex Joicey Coll.) (BMNH).

Paratypes. Colombia: 4 ♀, (no further data); 3 ♀, Bogata; 2 ♀, Valdevia, 1897 (*Pratt*) (BMNH); 3 ♀, 'Colombia' (BM, Brighton).

There is little variation in the series of ten specimens in the BMNH and three specimens in the Hall Coll. (BM, Brighton). Compared with other species in this section, *E. anomala* appears to be relatively common. It was attributed to *ithomioides* by Röber, but the absence on the forewing of the spot at base of s2 makes this attribution doubtful.

Eresia nigripennis Salvin comb. rev., stat. rev.

(Figs 125, 125a, 408)

Eresia nigripennis Salvin, 1869: 170; Godman & Salvin, 1882: 186, pl. 20, figs 15, 16. LECTOTYPE ♂, COSTA RICA: Cache (*Carmiol*) (BMNH, BM Type no. Rh. 8563; Gabriel, 1927: 86), here designated [examined].

Eresia dimorphina Butler, 1872: 78; Butler, 1874: 182, pl. 63, fig. 1 (♀). LECTOTYPE ♀, COSTA RICA: (van Patten) (BMNH; BM Type no. Rh. 8564), here designated [examined].
Phyciodes nigripennis (Salvin) Röber, 1913: 447, pl. 90, row i [fig. 4] (♂); Hall, 1929: 169.
Phyciodes (Eresia) phillyra nigripennis (Salvin); Forbes, 1945: 168.

♂ forewing 26–27 mm, elongate, apex truncate, outer margin excavate; upperside black with rather small postdiscal and submarginal white or yellowish spots; hindwing orange-red, costal and marginal borders black, enclosing pale submarginal spots in s7 and s8; ♀ larger, forewing 30–31 mm, wider, less abruptly truncate, pale markings usually yellowish, fulvous basal stripe indistinct; hindwing as in ♂.

Genitalia. ♂ like *E. phillyra*, shoulders of tegumen not greatly developed, posterior border of juxta curved, saccus rather slender (slide no. 896). ♀ not examined.

DISTRIBUTION. Restricted to Costa Rica.

Eresia emerantia Hewitson comb. rev.

(Figs 126, 127, 409, 410)

Eresia emerantia Hewitson, [1857]: [43], pl. [22], figs 7, 11; Röber, 1913: pl. 92, row d [fig. 6] (♂). LECTOTYPE ♂, COLOMBIA: 'New Grenada' (BMNH, Type no. Rh. 8551; Gabriel, 1927: 45), here designated [examined].

Eresia emerentia [sic!] Hewitson; Hewitson, [1864]: pl., fig. 14 (♂).

Phyciodes emerantia (Hewitson); Röber, 1913: 446.

Phyciodes celemina Röber, 1913: 448, pl. 90, row k [fig. 1] (♀). LECTOTYPE ♀, COLOMBIA: Cundinamarca, vii. 1903 (*de Mathau*) (BMNH), here designated [examined].

Phyciodes emerentia [sic!] (Hewitson); Hall, 1930: 173; Forbes, 1945: 170, 189.

♂ forewing 25 mm, upperside fulvous, black margins wide, apex black, enclosing 3 white subapical spots; hindwing underside yellowish, marginal spots pale yellow, large. ♀ differs: forewing wider, postdiscal area black with irregular white spots, submarginal spots white, series complete on both wings, resembling *E. ithomioides pseudocelemina* ♂.

Genitalia. ♂ in dorsal view elongate, shoulders of tegumen not conspicuous, inferior lamina of scaphial membrane well developed, spiny bosses defined, posterior border of juxta prominent, falces relatively very slender (slide no. 2740). ♀ with usual generic characters, rami of bursal support long.

DISTRIBUTION. Colombia.

Eresia moesta Salvin & Godman comb. rev.

(Figs 173, 411, 412)

Eresia moesta Salvin & Godman, 1868: 145. LECTOTYPE ♀, ECUADOR: Canelos (*Pearce*) (BMNH, Type no. Rh. 8577; Gabriel, 1927: 82), here designated [examined].

Eresia ildica Hewitson, 1869a: 24 [index]; Hewitson, [1872]: [30], pl. [15], fig. 84 (♀). LECTOTYPE ♀, ECUADOR: Aguano (*Buckley*) (BMNH, Type no. Rh. 8578; Gabriel, 1927: 62), here designated [examined].

Eresia cerquita Dognin, 1894: 680. LECTOTYPE ♂, ECUADOR: environs de Loja (BMNH), here designated [examined]. [Specimen bears Dognin's m/s type label.]

Eresia (Phyciodes) ildica var. *heliciformis* Strand, 1912a: 143. Holotype, ECUADOR: Macas ('Niepelt Coll. '; MNHU, Berlin ?).

Phyciodes ildica fassli Röber, 1913: 447, pl. 90, row i [figs 5, 6]. ♂, ♀ syntypes, COLOMBIA: Upper Rio Negro, 2500 ft [830 m] (*A. H. Fassli*) (Rothschild Coll., BMNH; Hall, 1930: 189; not found, but one ♂ from Bogota, ex Rothschild, is labelled 'Phyciodes fassli Röbb./Type' in Röber's handwriting). *Syn. n.*

Phyciodes moesta moesta (Salvin & Godman); Hall, 1930: 187; Forbes, 1945: 170.

Phyciodes moesta moesta f. *cerquita* (Dognin); Hall, 1930: 188; Forbes, 1945: 171.

Phyciodes moesta moesta f. *ildica* (Hewitson); Hall, 1930, 1930: 188, Forbes, 1945: 171.

Phyciodes moesta fassli Röber; Hall, 1930: 188; Forbes, 1945: 170.

♂ forewing 27–28 mm, upperside grey or rarely with slight reddish basal flush, more or less translucent, costa and outer margin rather broadly black, otherwise unmarked; hindwing usually similar, occasionally with red discal flush, costa and outer margin black, white submarginal spots usually present. ♀ similar, slightly larger.

The following colour forms have been named: 1, inner margin of hindwing red, f. *cerquita*; 2, forewing base and discal field of hindwing brick-red, f. *ildica*; 3, hindwing inner margin red, shading to yellow over disc, f. *fassli*.

Genitalia. ♂ organs large, tegumen short, shoulders not well developed, scaphial extension short, terminal bosses well defined with large spines, saccus base wide, tapering rapidly; penis with usual generic characters (slide no. 2793).

DISTRIBUTION. S. Colombia, Ecuador, Peru.

Eresia phaedima Salvin & Godman **comb. rev.**

(Figs 128, 413)

Eresia phaedima Salvin & Godman, 1868: 146. LECTOTYPE ♂, PERU: POZZUZO (*Pearce*) (BMNH, Type no. Rh. 8579; Gabriel, 1927: 97; genitalia slide no. 639), here designated [examined].

Eresia prisca Hopffer, 1874: 349; Röber, 1913: pl. 92, row e [fig. 1] (♂). ♂ syntypes, 'MEXICO'; PERU: Chanchamayo (*Thamm*) (MNHU, Berlin).

Phyciodes prisca (Hopffer); Röber, 1913: 447.

Melitaea (Phyciodes) magniplaga Röber, 1927: 98, fig. LECTOTYPE ♂, COLOMBIA: Canungucho, iii.-vi. 1926 (BMNH), here designated, [examined]. **Syn. n.**

Phyciodes phaedima (Salvin & Godman) Hall, 1930: 185; Forbes, 1945: 169, 189.

Phyciodes magniplaga (Röber) Hall, 1930: 186; Forbes, 1945: 170, 189.

♂ forewing 29–30 mm, like *moesta*, costa and outer margin black, base with fulvous extending along s1b to outer margin, short, oblique black band across cell, cell apex and postdiscal area translucent except postdiscal black band from costa to v4; hindwing like *moesta* but disc fulvous-brown, costa and outer margin broadly black, white submarginal spots prominent, apex of s6 usually yellow. ♀ similar, larger.

A single colour form has been named: upperside pale areas yellow, not fulvous-brown, f. *magniplaga*.

Genitalia. ♂ organs wide, tegumen narrow, scaphial extension longer than that of *moesta*, saccus rather narrow, elongate. ♀ not examined.

DISTRIBUTION. Peru, Colombia. According to Hall (1930: 186), Hopffer's record for Mexico is erroneous.

Eresia datis Hewitson **comb. rev.**

(Figs 129, 414)

Eresia datis Hewitson, [1864]: [17].

Phyciodes datis (Hewitson) Hall, 1930: 182.

♂ forewing 29–30 mm, upperside black, a broad discal band cream-white, a short basal streak below cell and field of hindwing brown or orange-brown; hindwing black marginal border rather wide, enclosing white submarginal dots, more distinct on underside. ♀ unknown.

DISTRIBUTION. Peru, Bolivia.

Two subspecies.

Eresia datis datis Hewitson

(Fig. 129)

Eresia datis Hewitson, [1864]: [17], pl. [9], fig. 14. LECTOTYPE ♂ [UPPER AMAZON—see Hall, 1930: 183] (BMNH, Type no. Rh. 8575, Gabriel, 1927: 38), here designated [examined].

? *Phyciodes fenestrata* Röber, 1914: 450, pl. 91, row c, fig. 3. Lectotype ♂, PERU: Huayabamba, SE. of Chachapoyas, 3500 ft [1300 m] (*O. T. Baron*) (BMNH) [examined]. [Specimen bears Röbers M/S determination labels.]

Phyciodes datis datis (Hewitson); Hall, 1930: 182; Forbes, 1945: 169, 189.

? *Phyciodes datis fenestrata* Röber; Hall, 1930: 183; Forbes, 1945: 169.

? *Phyciodes fenestrata derivata* Bryk, 1953: 92. Holotype ♀, PERU: Roque (NR, Stockholm).

♂ upperside basal streak of forewing and field of hindwing orange-brown.

Genitalia. ♂, in dorsal view, like *clara*, tegumen with a curious small central hiatus in two specimens examined, shoulders defined, scaphial extension with moderately divergent lateral walls, posterior border of juxta with small central prominence, saccus linguulate (slide no. 623).

DISTRIBUTION. 'Upper Amazon' (lectotype), Peru.

Eresia datis corybassa Hewitson

(Fig. 414)

Eresia corybassa Hewitson, 1874a: 6. LECTOTYPE ♂, BOLIVIA (*Buckley*) (BMNH, Type no. Rh. 8574; Gabriel, 1927: 35), here designated [examined].

Phyciodes cornelia Staudinger in litt.; Röber, 1914: 450, pl. 92, row g [fig. 1] (as *Eresia*). [Invalid: proposed in synonymy with *corybassa*.]

Phyciodes datis corybassa (Hewitson); Hall, 1929: 184; Forbes, 1945: 169.

? *Phyciodes corybassa mimicry* Bryk, 1953: 91. Holotype ♂, PERU: Roque (NR, Stockholm).

Like *E. datis datis*, but ♂ upperside basal streak of forewing and field of hindwing dark mahogany brown. ♀ similar, but larger.

Genitalia. Like *E. datis datis*, lateral walls of scaphial extension more divergent (single preparation).

DISTRIBUTION. S. Peru, Bolivia.

Eresia margaretha Hewitson comb. rev.

(Figs 130, 415)

Eresia margaretha Hewitson, [1872]: [29], pl. [15], fig. 77. LECTOTYPE ♂, COLOMBIA: Bogota ('New Granada') (*Chesterton*) (BMNH, Type no. Rh. 8576; Gabriel, 1927: 78), here designated [examined].

Phyciodes margaretha (Hewitson) Röber, 1914: 450, pl. 91, row b [fig. 1] (as *Eresia*).

Phyciodes margaretha manto Hall, 1930: 185. Holotype ♂, COLOMBIA: Rio Dagua (BMNH) [examined].

Syn. n.

Phyciodes margaretha margaretha (Hewitson); Hall, 1930: 184; Forbes, 1945: 169.

Phyciodes (Eresia) margaretha manto Hall; Forbes, 1945: 169.

♂ forewing 25 mm, upperside black, discal band and subapical spots yellow; basal streak and discal field of hindwing brick-red. ♀ unknown.

Genitalia. ♂, in dorsal view, organs wide, tegumen wide, scaphial extension and terminal spiny bosses well defined, posterior border of juxta almost straight, saccus wide, tapering rapidly to a pointed apex (slide no. 2718).

DISTRIBUTION. Colombia.

Eresia eunice (Hübner) comb. rev.

(Figs 131, 132, 135, 416–420)

Nereis fulva eunice Hübner, [1807]: pl. 9.

Eresia eunice (Hübner) Hewitson, [1857]: [44].

♂ forewing 22–25 mm, upperside base fulvous, distally paler, yellowish, markings black, a short stripe on median vein, a wide oblique band across end of cell which terminates abruptly in s3, but continues narrowly along v3 to blend with black outer margin, apex black, sometimes with traces of yellowish markings; hindwings similar, yellowish anterior to the wide black subcentral transverse band, submarginal area usually darker fulvous, subcostal stripe and outer margin black. ♀ similar, often slightly larger.

Genitalia. ♂ tegumen wide, tapering to well-formed shoulders, lateral walls of scaphial extension divergent, terminal bosses well defined with small spines, posterior border of juxta convex, valve apex slender, penis apex slender, ostium-keel prominent. ♀ bursal duct chitinised, short, bursal support globular, supporting rami short.

DISTRIBUTION. Brazil, the Guyanas, Panama, Venezuela, Colombia, Bolivia, Peru, Ecuador.

DISCUSSION. Three subspecies (or major colour phenotypes) are described below. It is difficult

to define these forms on a geographical basis although one or other of them may preponderate in a given area. Hall (1929: 157) states that nominate *eunice* is almost constant in Guyana and W. Brazil if the form *pella* is excluded. Intermediates between the several forms are very common and in some districts, according to Hall, two or more may fly together.

Eresia eunice eunice (Hübner)

(Figs 131, 418–420)

Nereis fulva eunice Hübner, [1807]: pl. 9, 4 figs. Syntype(s) ♂, ♀, [SOUTH AMERICA] (depository unknown).
Eresia pella Hewitson, [1852]: [59], pl. [30], fig. 2. Syntypes, [BRAZIL] ('Amazon'): W. W. Saunders & W. C. Hewitson Colls (not in BMNH, probably in UM, Oxford).
Eresia eunice (Hübner) Hewitson, [1857]: [44]; Bates, 1864b: 191.
 [Eresia olivencia Bates; Röber, 1913: pl. 92, row b [fig. 1] (♀). Misidentification.]
Phyciodes eunice eunice (Hübner); Hall, 1929: 156; Forbes, 1945: 167, 171.

♂ upperside fulvous, distal areas slightly paler in tone; hindwing yellow transverse discal band with black band posteriorly, followed by fulvous area. ♀ similar, often showing greater colour contrast, on forewing distal pale areas may be yellow.

Genitalia. As described above.

DISTRIBUTION. Brazil (including Lower Amazon), the Guyanas, Colombia, Peru, Ecuador.

Eresia eunice olivencia Bates

(Fig. 132)

Eresia eunice var. *olivencia* Bates, 1864b: 191. LECTOTYPE ♂, BRAZIL: São Paulo de Olivença (H. W. Bates) (BMNH, Type no. Rh. 8555; Gabriel, 1927: 89), here designated [examined].
Eresia drypetis Godman & Salvin, 1878: 269; Godman & Salvin, 1882: 184, pl. 20, figs 11, 12. Holotype ♂, PANAMA: Lion Hill (*McLeannan*) (BMNH, Type no. Rh. 8556; Gabriel, 1927: 43) [examined]. **Syn. n.**
Phyciodes olivencia (Bates) Staudinger, 1885: 193.
Ecesia [sic!] *klagesii* Weeks, 1906: 195. Syntypes, VENEZUELA: Suapure (? MCZ, Cambridge).
Eresia klagesii Weeks; Weeks, 1911: 1, pl. 1 (? ♂).
Phyciodes olivencia f. *gudruna* Röber, 1913: 447, pl. 92, row b [fig. 2] (as *Eresia*). Syntype(s), 'Upper Amazon' (depository unknown).
Phyciodes olivencia f. *brunhilda* Röber, 1913: 447, pl. 92, row b [fig. 3] (as *Eresia*). Syntype(s), 'Upper Amazon' (depository unknown).
Phyciodes olivencia polymnia Röber, 1913: 447. ♂, ♀ syntypes, COLOMBIA: Medina, 1600 ft [530 m] (*Fassl*) (depository unknown).
Phyciodes eunice eunice f. *olivencia* (Bates); Hall, 1929: 157.
Phyciodes eunice eunice f. *klagesii* (Weeks); Hall, 1929: 158.
Phyciodes eunice eunice f. *brunhilda* Röber; Hall, 1929: 158.
Phyciodes eunice drypetis (Godman & Salvin); Hall, 1929: 158; Forbes, 1945: 167, 171.
Phyciodes (Eresia) eunice brunhilda Röber; Forbes, 1945: 166.
Phyciodes (Eresia) eunice olivencia (Bates); Forbes, 1945: 167.
Phyciodes (Eresia) eunice gudruna Röber; Forbes, 1945: 167.
 ? *Phyciodes eunice homogena* Bryk, 1953: 89–90. ♂, ♀ syntypes, BRAZIL: Amazonas, Taracua (NR, Stockholm).

♂ Upperside orange-brown, variable, black markings often reduced, pale areas prominent but without colour-contrast. Several named phenotypes, as noted in synonymy above. ♀ similar.

DISTRIBUTION. Brazil (locally), Venezuela, Guatemala, Colombia, Peru, Panama.

Eresia eunice esora Hewitson

(Figs 135, 417)

Eresia esora Hewitson, [1857]: [44], pl. [22], fig. 12. LECTOTYPE ♂, BRAZIL: [Espirito Santo] (BMNH, Type no. Rh. 8558; Gabriel, 1927: 47), here designated [examined].
Phyciodes esora (Hewitson) Röber, 1913: 446.

[*Eresia eunice* (Hübner); Röber, 1913: pl. 92, row a [fig. 3] (♀). Misidentification.]

Phyciodes eunice esora (Hewitson); Hall, 1929: 158; Forbes, 1945: 167, 171; Hayward, 1964b: 340, pl. 18, fig. 13.

? *Phyciodes eunice* ♀ f. *albella* Zikán, 1937: 385. Holotype ♀, BRAZIL: [Fazenda] 'Jerusalem', Alegre, Espirito Santo, May (? Rio de Janeiro).

♂ forewing 22–23 mm, upperside apex solid black, oblique black costal bar wide, tapering, pale discal and postdiscal markings yellow, with marked colour-contrast; hindwing upperside yellow anterior to the black transverse band, ♂ genitalia examined, slide no. 2717. ♀ similar, usually larger.

DISTRIBUTION. Brazil (constant from Pernambuco, Bahia and Mato Grosso southwards; northern and north-western populations are more variable but remain distinct from *eunice eunice*), Ecuador, Paraguay, NE. Argentina.

DISCUSSION. Of all the modifications of this variable species, *esora* most nearly shows the characters and distribution of a true geographical race.

Eresia etesia (Hall) comb. n., stat. n.

(Figs 133, 134, 421)

Phyciodes erysice etesia Hall, 1929: 160, pl. 1, figs 8, 9. Holotype ♂, FRENCH GUIANA: 'Cayenne' (BMNH) [examined].

Phyciodes (Eresia) erysice etesia Hall; Forbes, 1945: 168.

♂ like *E. eunice*, forewing 25–26 mm, base fulvous, including most of cell and base of s2, oblique mark in mid-cell and irregular discal bar black, the last followed by yellow postdiscal band heavily suffused black, round yellow spots in s2 and in s4 rather prominent; hindwing upperside fulvous, costa and postdiscal band black, narrow submarginal lunules present from s1c–s8; forewing underside markings expanded, pale yellow.

Genitalia. ♂ tegumen like *eunice*, slightly wider, posterior border of juxta gently convex, valve apex more robust, penis more massive, slightly sinuous (slide no. 1026). ♀ not examined.

DISTRIBUTION. French Guiana, N. Brazil.

Eresia erysice (Geyer) comb. n.

(Fig. 136)

Melinaea erysice Geyer, 1832: 28, figs 717, 718. Syntype(s), 'SOUTH AMERICA' (depository unknown) [For date and authorship see Hemming, 1937(1): 478.]

Phyciodes erysice Hübner; Kirby, 1871: 176.

Phyciodes erysice erysice Geyer; Hall, 1929: 160

Phyciodes (Eresia) erysice erysice (Hübner); Forbes, 1945: 168, 189.

♂ forewing 27 mm, upperside like *E. etesia*, forewing black discal band irregular but complete from costa to outer margin at v2, followed by well-developed, regular yellow oblique band, pale postdiscal spots in s2 and s4 absent (prominent in *etesiae*). Hindwing upperside transverse fulvous band broadly suffused with yellow; underside markings similar, hindwing underside submarginal spots white, series complete. ♀ larger, wings more rounded, pattern paler and more diffuse.

Genitalia. Not available for dissection.

DISTRIBUTION. Brazil, restricted to dense forest in Bahia, very rare and local (K. Brown, pers. comm.).

NOTE. The original figures 717, 718 were published by Hübner in [1826], but the name was published by Geyer in 1832, who also indicates that the original material was in the Franck Collection (Strasbourg). Hübner's anonymous catalogue of the Franck Collection ([Hübner], [1825]) does not list the species by name, but it may have been included by him as one of the un-named entries; it is possible that Hübner made his figures of the insect during his visit to Strasbourg.

Eresia casiphia Hewitson comb. rev.

(Figs 137, 138, 422)

Eresia casiphia Hewitson, 1869a: 25, [index]; Hewitson, [1870]: [38], pl. [21], figs 72, 73. LECTOTYPE ♂, ECUADOR: Jorge (*Buckley*) (BMNH, Type no. Rh. 8561; Gabriel, 1927: 27), here designated [examined]. *Phyciodes casiphia* (Hewitson) Röber, 1913: 446; Hall, 1929: 166, pl. 1, fig. 7 (♀). *Phyciodes (Eresia) casiphia* (Hewitson); Forbes, 1945: 167, 189.

♂ upperside fulvous, markings black; forewing 23 mm, apex and wing-margins black, proximal oblique bar wide at costa, tapering to anal angle, distal oblique bar shorter, wider, fusing with outer margin, yellowish preapical bar present but rather obscure; hindwing post-discal transverse bar complete, fusing with marginal black border, a small white spot at *s*7 enclosed within the border. ♀ similar, forewing 27 mm, wider, upperside postdiscal band pale yellow, series of white submarginal spots complete around both wings.

Genitalia. Like *E. eunice*, slightly wider, in dorsal view posterior border of juxta almost flat (slide no. 1027). ♀ genitalia not examined.

DISTRIBUTION. Ecuador.

Eresia mechanitis Godman & Salvin comb. rev., stat. rev.

(Figs 139, 423)

Eresia mechanitis Godman & Salvin, 1878a: 269; Godman & Salvin, 1882: 183, pl. 20, figs 13, 14. Lectotype ♀, NICARAGUA: Chontales (*Janson*) (BMNH, Type no. Rh. 8557; Gabriel, 1927: 79), designated by Godman & Salvin, 1882: 184 [examined].

Phyciodes mechanitis (Godman & Salvin) Röber, 1913: 447, pl. 90, row h [fig. 5] (♂).

? *Phyciodes mechanitis* f. *daguana* Bargmann, 1928: 236. Holotype ♂, COLOMBIA: Rio Dagua (via Joicey to BMNH?)—not found.

Phyciodes eunice mechanitis (Godman & Salvin); Hall, 1929: 159; Forbes, 1945: 167.

Like *E. eunice*, ♂ forewing 27 mm, upperside first oblique band continues to outer margin (in *eunice* ceases abruptly in *s*3, or dwindles to a narrow line along *v*3), apical yellow band defined, forming a wide black preapical band (in *eunice* yellow apical markings are vestigial or absent); hindwing outer margin angled at *v*7 (less acutely angled in *eunice*). ♀ similar.

Genitalia. Like *E. eunice*, scaphial extension short, spiny bosses relatively large, posterior border of juxta convex (slide no. 1243). ♀ not examined.

DISTRIBUTION. Nicaragua, Costa Rica, ? Colombia.

DISCUSSION. Hall considered *E. mechanitis* to be a subspecies of *E. eunice*. Represented in the BMNH by 4 ♂, 3 ♀, in which the markings are constant; the series does not associate well with *E. eunice*. The genitalic characters are equivocal in this group.

Eresia pelonia Hewitson comb. rev.

(Figs 140–142, 424, 425)

Eresia pelonia Hewitson, [1852]: [59], pl. [30], fig. 3. LECTOTYPE ♂, ECUADOR: 'Quito' (BMNH, Type no. Rh. 8559; Gabriel, 1927: 95), here designated [examined].

Eresia ithomiola Salvin, 1869: 171. LECTOTYPE ♂, PERU: Cosnipata Valley (*H. Whitely*) (BMNH, Type no. Rh. 8560; Gabriel, 1927: 66), here designated [examined].

Eresia pelonia Hewitson; Hewitson, [1870]: [35], pl. [20], figs 64–67 [fig. 66, f. *ithomiola*].

Phyciodes callonia Staudinger, 1885: 92, pl. 36. 2 ♂, 1 ♀ syntypes, PERU: Pebas; Jurimaguas (*Hahnel*) (MNHU, Berlin).

Phyciodes callonia var. *murena* Staudinger, 1885: 92. 2 syntypes, PERU: Chanchamayo (? MNHU, Berlin).

Eresia callonioides Strand, 1912b: 181. Holotype ♀, PERU (BMNH) [examined].

Phyciodes pardalina Röber, 1913: 447, pl. 90, row h [fig. 6]. LECTOTYPE ♂, PERU: Pebas, xii. 1906 (*de Mathan*) (BMNH) here designated [examined]. [Specimen bears Röber's M/S determination label.]

Phyciodes pardalina apicalis Röber, 1913: 447, pl. 90, row i [fig. 1]. LECTOTYPE ♂, PERU: Rio Chuchurras, R. Palcazu, 320 m (*W. Hoffmanns*) (BMNH) here designated [examined]. [Specimen bears Röber's M/S determination label.]

- Phyciodes murena heliconina* Röber, 1913: 447. LECTOTYPE ♀, PERU: Pebas, xii. 1906 (*de Mathan*) (BMNH), here designated [examined]. [Specimen bears Röber's M/S' determination label.]
- Phyciodes murena* Staudinger; Röber, 1913: 447, pl. 92, row c [fig. 1] (♀—as *Eresia*).
- Phyciodes pella* [sic!] (Hewitson) Röber, 1913: 446, pl. 92, row b [fig. 4] (as *Eresia*).
- Eresia callonioides* var. *pastazana* Strand, 1920: 147. Holotype ♀, ECUADOR: Upper Pastaza, c. 1000 m, x-xii. 1906 (BMNH) [examined].
- Phyciodes pelonia* f. *hewitsonii* Hall, 1929: 164. Holotype ♀, ECUADOR (BMNH) [examined].
- Phyciodes pelonia pelonia* (Hewitson); Hall, 1929: 161; Forbes, 1945: 167.
- Phyciodes pelonia* f. *callonia* Staudinger; Hall, 1929: 162.
- Phyciodes pelonia* f. *pardalina* Röber; Hall, 1929: 163.
- Phyciodes pelonia* f. *apicalis* Röber; Hall, 1929: 163.
- Phyciodes pelonia* f. *ithomiola* (Salvin); Hall, 1929: 163.
- Phyciodes pelonia* f. *heliconina* Röber; Hall, 1929: 163.
- Phyciodes pelonia* f. *callonioides* (Strand); Hall, 1929: 164.
- Phyciodes (Eresia) pelonia apicalis* Röber; Forbes, 1945: 167.
- Phyciodes (Eresia) pelonia callonia* Staudinger; Forbes, 1945: 168.
- Phyciodes (Eresia) pelonia callonioides* (Strand); Forbes, 1945: 168.
- Phyciodes (Eresia) pelonia heliconina* Röber; Forbes, 1945: 168.
- Phyciodes (Eresia) pelonia hewitsonii* Hall; Forbes, 1945: 168.
- Phyciodes (Eresia) pelonia ithomiola* (Salvin); Forbes, 1945: 168.

♂ forewing 26–28 mm, upperside fulvous, with or without yellow postdiscal band, and with black markings, forewing apex usually broadly black; hindwing upperside fulvous, subcostal and discal stripes black, submarginal spots white (if present), best developed on underside. ♀ similar, larger. (For principal colour forms see 'Discussion'.)

Genitalia. ♂, in dorsal view, tegumen rather narrow, shoulders not prominent, scaphial bosses appear incompletely developed with large spines on the external aspects on each side, posterior border of juxta almost straight; penis specifically distinctive, posterior section massive, slightly sinuous (slide no. 2558). ♀ not examined.

DISTRIBUTION. Peru, Ecuador, Bolivia, Brazil ('Amazonas').

DISCUSSION. This species is extremely variable. Three principal phenotypes are recognised which, according to Hall (1929), may all fly together; their genitalia are similar. These are described below as 'forms'.

1. ♂ upperside fulvous, forewing postdiscal band yellow, wing apex black; hindwing fulvous, costal and transverse bars black.

Recorded from Upper Amazon, Peru and Ecuador, f. *pelonia*.

2. ♂ upperside as in f. *pelonia*, but forewing upperside without yellow post-discal band; hindwing broadly black, by extension of costal and transverse black bars, submarginal black border absent. This form occurs in both sexes.

Recorded from Peru, Ecuador and Bolivia, f. *ithomiola* (= *murena*; *apicalis* is similar).

3. Like f. *pelonia*, but forewing apical areas enclose yellow subapical spots which may be large; hindwing upperside often more or less suffused with black. A form close to f. *pelonia*, but with forewing apical areas slightly spotted, was named *pardalina* by Röber.

Recorded from Ecuador (most common in ♀), f. *callonia* (= *hewitsonii*).

Eresia phillyra Hewitson comb. rev.

(Figs 143, 144, 185, 426, 427)

Eresia phillyra Hewitson, [1852]: [59], pl. [30], fig. 1. ♀ syntype(s), MEXICO (W. W. Saunders Coll.; probably in UM, Oxford), several ♀ specimens of 'phillyra' ex Hewitson in BMNH.

Eresia ezorias Hewitson, [1857]: [44], pl. [22], fig. 13. Lectotype ♂, MEXICO (BMNH, Type no. Rh. 8562; Gabriel, 1927: 49), here designated [examined].

Phyciodes phillyra (Hewitson) Röber, 1913: 448; pl. 92, row c [figs 3, 4] (as *Eresia*); Hall, 1929: 167.

Phyciodes (Eresia) phillyra phillyra (Hewitson); Forbes, 1945: 168, 189.

♂ upperside fulvous, markings black; ♂ forewing 26–27 mm, narrow, apex truncate, outer margin excavate, wing margins black, oblique post-discal band complete; hindwing with black transverse bar below centre, prominent. ♀ larger, forewing 32 mm, broader, apex more rounded, outer margin straight, upperside markings as in ♂, but apical and marginal spots pale yellow.

Genitalia. ♂ like *E. eunice*, terminal bosses of scaphial extension well defined, posterior border of juxta almost straight; penis massive (slide no. 2569).

DISTRIBUTION. Mexico, Guatemala, ? Honduras, ? Brazil.

Eresia aveyrona Bates comb. rev., stat. rev.

(Figs 145, 428)

Eresia aveyrona Bates, 1864: 192.

♂ forewing very narrow, upperside fulvous, oblique costal bar and wing margins black. ♀ similar, forewing slightly wider.

Genitalia. ♂ like *E. perna*, scaphial extension narrower, spiny bosses less prominent (single preparation). ♀ not examined.

DISTRIBUTION. The Guyanas, Brazil (on Lower Amazon), Venezuela, Costa Rica, Ecuador.

Two subspecies, with similar genitalia.

Eresia aveyrona aveyrona Bates

(Figs 145, 428)

Eresia aveyrona Bates, 1864b: 192, pl. 10, fig. 4. Holotype ♀, BRAZIL Aveyros, on the Tapajos (*H. W. Bates*) (BMNH, Type no. Rh. 8543; Gabriel, 1927: 20), [examined].

Phyciodes aveyrona (Bates) Staudinger, 1885: 93; Röber, 1913: 446, pl. 92, row d [fig. 3] (as *Eresia*).

Phyciodes perna aveyrona (Bates); Hall, 1929: 153; Forbes, 1945: 165.

♂ forewing 24 mm, outer margin slightly excavate, upperside fulvous yellow, veins lined black, fulvous apical macule divided. ♀ forewing wider, upperside hindwing orange submarginal line more prominent.

DISTRIBUTION. The Guyanas, Brazil, Venezuela, Costa Rica.

Eresia aveyrona mylitta Hewitson nom. rev., stat. n.

Eresia mylitta Hewitson, 1869a: 26 [index], LECTOTYPE ♂, ECUADOR: St. Ines (*Buckley*) (BMNH, Type no. Rh. 8544; Gabriel, 1927: 21, as *bella*), here designated [examined].

Eresia bella Hewitson, 1869a: ii. [Unjustified replacement name for *Eresia mylitta* Hewitson; originally proposed by Kirby who intended to place *mylitta* Hewitson in the same genus as the older proposed nominal species *Melitaea mylitta* Edwards.]

[*Eresia bella* Hewitson; Hewitson, [1870]: [37], *Eresia* pl. 9, fig. 71.]

Phyciodes bella Kirby, 1871: 177. [Replacement name proposed by Kirby on transferring *mylitta* (Hewitson) and the older established *mylitta* (Edwards) both to *Phyciodes*; Kirby was apparently unaware that Hewitson had already published the name in the form of an unjustified replacement.] Syn. n.

Phyciodes bella Kirby; Röber, 1913: 446, pl. 88, row i [fig. 2] (♂).

Phyciodes perna bella (Hewitson); Hall, 1929: 153; Forbes, 1945: 162, 166.

♂ forewing 22.5 mm, smaller, upperside bright fulvous, veins not lined black, apical fulvous macule not divided. ♀ not seen.

DISTRIBUTION. Ecuador.

DISCUSSION. *Eresia mylitta* is placed here as a subspecies with *E. aveyrona*. It appears to be present only in Ecuador, and rather isolated from nominate *aveyrona*, which is not recorded from this region. The butterflies are rare and more information is required before their true relationship can be decided.

Eresia perna Hewitson comb. rev.

(Figs 146, 429)

Eresia perna Hewitson, [1852]: [60], pl. [30], fig. 5. LECTOTYPE ♂, BRAZIL: Rio de Janeiro (BMNH, Type no. Rh. 8545; Gabriel, 1927: 95), here designated [examined].

Phyciodes alma Staudinger, 1885: 93, pl. 36 (♂). ♂, ♀ syntypes, BRAZIL: Sta Catharina, Blumenau (MNHU, Berlin).

Phyciodes perna (Hewitson) Röber, 1913: 446, pl. 92, row g [figs 4, 5] (as *Eresia*).

Phyciodes perna perna (Hewitson); Hall, 1929: 152; Forbes, 1945: 165.

♂ forewing 21 mm, very elongate, upperside black, markings yellow to cream, an obscure basal stripe across cell terminates in a yellow spot in s₂, a second more distal spot is placed in s₄; hindwing upperside black, with yellow transverse band. ♀ larger, forewing 25 mm, broader, apex more rounded, post-discal spots tend to cream-white.

Genitalia. ♂ tegumen short in dorsal view, shoulders prominent, scaphial terminal bosses appear oval, well defined, spines small and irregular, posterior border of juxta with central prominence, saccus wide, tapering (slide no. 2716). ♀ not examined.

DISTRIBUTION. Brazil (coastal districts from Espirito Santo southwards to Santa Catarina, rare and local, flying in dense vegetation; Keith Brown, pers. comm.).

Eresia levina Hewitson comb. rev.

(Figs 151, 430, 431)

Eresia levina Hewitson, [1872]: [29], pl. [15], fig. 78; Fassl, 1912: 122 (♀). Syntype(s) ♂, COLOMBIA: 'New Granada' (W. W. Saunders Coll.; probably in UM, Oxford).

Morpheus felderi Hopffer, 1874: 351. Holotype ♂, [COLOMBIA] (not 'Bolivia' according to K. S. Brown in litt.) (*Warscewicz*) (MNHU, Berlin).

Phyciodes levina (Hewitson) Staudinger, 1885: 94, pl. 36 (♀); Röber, 1914: 450, pl. 92, row e [fig. 3] (♂—as *Eresia*); Hall, 1930: 189; Forbes, 1945: 163, 189.

Phyciodes levina f. *decorata* Röber, 1914: 450. Syntypes, COLOMBIA (depository unknown).

? *Phyciodes levina werneri* Hering, in Hering & Hopp, 1925: 193. Holotype ♀, COLOMBIA: Rio Micay (MNHU, Berlin).

Phyciodes levina ab. *decorata* Röber; Hall, 1930: 180; Forbes, 1945: 163.

♂ forewing 24 mm, upperside black, discal band gleaming blue, otherwise unmarked. ♀ slightly larger, blue discal band edged white.

Genitalia. Distinctive, large, ♂ tegumen firmly chitinized, shoulders prominent, dorsal and ventral aspects of scaphial extension extensively chitinized but spiny bosses weakly developed, posterior border of juxta sinuous, terminal section of valve armed along inner aspect with fine teeth; penis apex rounded, ostium-keel absent (slide no. 98). ♀ not examined.

DISTRIBUTION. Colombia.

Eresia actinote Salvin comb. rev.

(Figs 152, 153, 432)

Eresia actinote Salvin, 1869: 171. LECTOTYPE ♂, PERU: Cosnipata Valley (*H. Whitely*) (BMNH, Type no. Rh. 8573, Gabriel, 1927: 6), here designated [examined].

Eresia acraea Hopffer, 1874: 349. ♂ syntype(s), PERU (MNHU, Berlin).

Phyciodes actinote (Salvin) Röber, 1913: 448; pl. 92, row f [fig. 2] (♂—as *Eresia*).

Phyciodes actinote limbata Röber, 1913: 448; Hall, 1930: 191. ♂ syntype(s), BOLIVIA (depository unknown)

Syn. n.

Phyciodes actinote actinote (Salvin); Hall, 1930: 190.

Phyciodes (*Eresia*) *actinote* (Salvin); Forbes, 1945: 164, 189.

♂ forewing 24–25 mm, upperside both wings orange-brown, veins and margins black, forewing with a wide black band which runs obliquely from costa to outer margin at s₂. ♀ unknown.

Genitalia. ♂ tegumen narrow in dorsal view, scaphial extension short, shoulders well defined, terminal

bosses large, heavily spined, posterior border of juxta gently convex, saccus short, harpes robust, slightly curved (slide no. 618).

DISTRIBUTION. Peru, Ecuador, Bolivia.

Eresia selene (Röber) **comb. n., stat. rev.**

(Figs 154, 433, 434)

Phyciodes selene Röber, 1913: 445, pl. 90, row f [figs 7, 8]. LECTOTYPE ♂, COLOMBIA: Cañon de Tolima, 1700 m, i. 1910 (*A. H. Fassl*) (BMNH), here designated [examined]. [Specimen bears Röbers M/S determination label.]

Phyciodes etia selene Röber; Hall, 1929: 72.

Phyciodes (Eresia) claudina selene Röber; Forbes, 1945: 159, 189.

♂ forewing 16–17 mm, upperside fulvous, margins and costal band black to outer margin; hindwing discal area fulvous, underside paler with confused grey markings. ♀ similar.

Genitalia. ♂ tegumen wide, strongly chitinized, scaphial extension well defined, lateral walls and terminal spiny bosses chitinized, posterior border of juxta gently convex, saccus wide, short, posterior process of valve massive but short (slide no. 832). ♀ not examined.

DISTRIBUTION. Colombia, Ecuador.

DISCUSSION. The ♂ genitalia of this species are typical of *Eresia*, but in general habitus and wing-markings there is an approach to species of the genus *Tegosa*, which has led to previous uncertainty as to the position of this species.

CASTILIA gen. n.

Type-species: *Eresia castilla* Felder & Felder. Gender: feminine.

In external characters the species are most variable, but they divide naturally into a non-mimetic group, and a mimetic group composed of the first five species described below, all mimics of *Actinote* species. All these occur in the mountainous regions of north-western South America; the females are rare, perhaps unknown in *C. neria* and *C. northbrundii*. In four species (*C. perilla*, *C. castilla*, *C. occidentalis* and *C. neria*) the venation of the forewings is unusual, vein 11 arising at or a little beyond the cell-end. In the hindwings the lower discocellular vein arises at or close to the junction of v2 and v3. These four species also show a distinctive character in the palpi, which are clothed with such long and abundant hair-scales that the terminal segments are almost hidden. The sexes differ.

The non-mimetic species have the forewings elongate, with pale markings on a dark ground, and are variable in size, with one species (*C. angusta*) quite small. Wing venation is normal and the palpal hairs are not conspicuously long, but relationship with the mimetic group is evident in the structure of the male and female genitalia. With the exception of *C. fulgora*, all these species were associated with *C. perilla* by Forbes (1945) in his group 12. In the non-mimetic forms the sexes are usually similar. In the mimetic group the special characters of the palpi and the unusual wing-venation could be taken as calling for generic separation. I have not suggested this as the group is small and generic separation would mask the relationship to the remaining species.

Genitalia. ♂ in dorsal view, tegumen short, un-armed, often feebly chitinized, valve terminating in a single point, curved strongly upwards in characteristic fashion, preceded by a slight dilatation and lacking pre-apical teeth, saccus deeply cleft in all species; penis straight, often massive, ostium-keel well developed. ♀ sterigma like *Eresia*, bursal duct usually chitinized and well formed, bursal support large, the usual lateral ribs exceptionally well developed in some species (e.g. *C. eranites*).

DISTRIBUTION. The generic range extends through central and western South America, including Colombia, Venezuela, Peru, Ecuador and Bolivia. The species *C. angusta* reaches NW. Argentina and Brazil in the Mato Grosso. With the exceptions of *C. fulgora* and *C. fausta*, there are adequate series of all species in the BMNH collections, but often from a single locality only. Especially in the non-mimetic group, the external characters of all species seem to be stable.

Key to species of *Castilia*

Males.

Note. It has not been practicable to include *C. griseobasalis* (p. 156) and *C. chinantlensis* (p. 157) in this key.

In *C. eranites*, females are like males with additional white postdiscal spots. Females of *C. neria* and of *C. nortbrundii* are not known; those of *C. occidentalis* are very rare. Females resemble males in *C. angusta*, *C. fulgora*, *C. ofella* and *C. myia* (probably also in *C. fausta*, but not yet described). The species *C. griseobasalis* and *C. chinantlensis* have not been included in the key; the former is closely related to *C. myia*, the latter to *C. eranites*.

1	Mimetic of <i>Actinote</i> , hindwing underside lined dark along and between veins	2
-	Markings variable, not mimetic of <i>Actinote</i>	5
2	Hindwing upperside costal margin white	<i>nortbrundii</i> (p. 154)
-	Hindwing upperside costal margin dark	3
3	Forewing upperside basal area fulvous, postdiscal area black, unmarked	<i>neria</i> (p. 154)
-	Forewing upperside not so marked	4
4	Forewing upperside postdiscal band red, yellow or white, width 8 mm or more	<i>perilla</i> (p. 153)
-	Forewing upperside postdiscal band red, width 4 mm or less	<i>castilla</i> (p. 152), <i>occidentalis</i> (p. 153)
5	Forewing 14 mm, very elongate, width 6 mm, or less	<i>angusta</i> (p. 157)
-	Forewing wider, species larger	6
6	Upperside markings fulvous on black	7
-	Upperside markings white or pale yellow	8
7	Forewing upperside wide fulvous band extending from base to post-discal area	<i>eranites</i> (p. 155)
-	Forewing upperside base black	<i>fulgora</i> (p. 155), <i>fausta</i> (p. 155)
8	Forewing upperside with white spot at cell-end	<i>ofella</i> (p. 156)
-	Forewing upperside lacking white spot at cell-end	<i>myia</i> (p. 156)

Females, mimetic species.

1	Forewing upperside base yellow-buff	<i>perilla</i> (p. 153)
-	Forewing upperside base black	2
2	Hindwing upperside discal area red-brown, black area matt	<i>castilla</i> (p. 152)
-	Hindwing upperside inner margin shaded red, black area with blue reflections	<i>occidentalis</i> (p. 153)

Castilia castilla (Felder & Felder) comb. n.

(Figs 155, 156, 435-437)

Eresia castilla Felder & Felder, 1862b: 419; Felder & Felder, 1867: 395, pl. 50, figs 7-10; Röber, 1913: pl. 91, row b [fig. 2]; pl. 92, row e [fig. 2]. LECTOTYPE ♂, COLOMBIA: Bogota Cordillera, near Pandi, 5600 ft. [1700 m] (*Lindig*) (BMNH), here designated [examined].

Phyciodes castilla (Felder & Felder) Röber, 1914: 450.

Phyciodes castilla ♀ f. *virilis* Röber, 1914: 450. ♀ syntype(s), COLOMBIA (depository unknown).

Phyciodes castilla castilla (Felder & Felder); Hall, 1930: 191.

Phyciodes (Tritanassa) castilla castilla (Felder & Felder); Forbes, 1945: 185, 190.

♂ forewing 25-26 mm, upperside black, discal band red, oblique, 3-5 mm wide; hindwing upperside black, unmarked; hindwing underside yellow-grey, 2 small basal red marks and radiating black stripes along and between veins. ♀ larger, forewing 27-28 mm, upperside dark grey, discal band irregular, yellow, 4-6 mm wide; hindwing upperside dark grey, base and discal area brown with black radiating stripes as on underside; a male-like ♀ form (*virilis*), with upperside dark grey-brown and discal band red, has been recorded by Röber.

Venation (Fig. 437). Forewing stalk of veins 7-10 arises with v11 and v6 at cell-end.

Genitalia. ♂ tegumen short, scaphial extension weakly chitinised, conical, posterior border of juxta slightly concave, harpe massive at base but tapering rapidly (slide no. 615). ♀ ductus and bursal support firmly chitinised, the large scutum especially noticeable.

DISTRIBUTION. Colombia (not recorded elsewhere).

Castilia occidentalis (Fassl) comb. n., stat. n.

(Figs 147, 148, 438–440)

Eresia castilla f. *occidentalis* Fassi, 1912: 122. ♂, ♀ syntypes, COLOMBIA: West Cordillera, 1500–2000 m (depository uncertain—MNHU, Berlin?).

Eresia castilla occidentalis Fassi; Röber, 1913: pl. 91, row c [fig. 1]; pl. 92, row e [fig. 2].

Phyciodes castilla occidentalis (Fassl) Röber, 1914: 450; Hall, 1930: 192; Forbes, 1945: 185.

? *Phyciodes aurora* Röber, 1914: 449; pl. 91, row b [fig. 3] (as *Eresia*); Hall, 1930: 192; Forbes, 1945: 190 (as ? ♀ of *castilla*). LECTOTYPE ♀, ECUADOR: 'Zamora, 3000–4000 ft.' (*O. T. Baron*) (BMNH) here designated [examined]. [Specimen bears Röber's M/S determination label.]

♂ forewing 21 mm, like *C. castilla* but smaller, upperside black, red postdiscal band more oblique and narrower. ♀ larger, upperside gleaming black, forewing discal band slightly wider, red or yellowish; hindwing with red anal mark which fades away near discoidal cell. The nominal species *aurora* Röber may represent a ♀-form of *occidentalis*; specimens of this sex are extremely rare.

Venation. Stalk of v7–v11 divides a little beyond cell, first discocellular vein present but short, v6 free.

Genitalia. ♂ similar to *C. castilla* but smaller, in dorsal view structure of tegumen less well defined, posterior border of juxta gently convex, valve apex bowed inwards, pre-apical bulge not greatly developed (slide no. 626).

DISTRIBUTION. Colombia, Ecuador.

Castilia perilla (Hewitson) comb. n.

(Figs 149, 150, 175, 176, 441–443)

Eresia perilla Hewitson, [1852]: [60], pl. [30], fig. 4. LECTOTYPE ♂, ECUADOR: 'Quito' (BMNH, Type no. Rh. 8567; Gabriel, 1927: 95), here designated [examined].

Eresia acraeina Hewitson, [1864]: [17], pl. [9], fig. 15. LECTOTYPE ♂, [PERU] 'Upper Amazon' (BMNH, Type no. Rh. 8568; Gabriel, 1927: 6), here designated [examined].

Eresia aricilla Hopffer, 1874: 350. ♂ syntypes, PERU: Chanchamayo (*Thamm*) (MNHU, Berlin).

Eresia heliconoides Butler, 1877: 120. LECTOTYPE ♂, PERU: Ucayali (*W. Davis*) (BMNH, Type no. Rh. 8569; Gabriel, 1927: 58), here designated [examined].

Phyciodes perilla (Hewitson) Staudinger, 1885: 94.

Phyciodes acraeina f. *hilarina* Röber, 1913: 448, pl. 92, row e [fig. 5] (as *Eresia acraeina*). Syntypes, 'Andes' (depository unknown).

? *Phyciodes neria* f. *microdryope* Röber, 1913: 448, pl. 92, row e [fig. 4] (as *Eresia*). Syntype(s), COLOMBIA (depository unknown).

Eresia amoenides Röber, 1913: pl. 92, row f [fig. 1]. [Published without description.]

Phyciodes acraeina ♀ f. *aberrans* Röber, 1913: 448, pl. 91, row a [fig. 5] (as *Eresia acraeina*). ♀ syntype(s), 'Andes' (depository unknown).

Phyciodes perilla lugubris Röber, 1914: 450. Syntypes, PERU (depository unknown).

Phyciodes pellenea Röber, 1914: 450, pl. 91, row c [fig. 2] (as *Eresia*). LECTOTYPE ♀, BOLIVIA: Reyes (*Stuart*) (BMNH), here designated [examined]. [Specimen bears Röber's M/S determination label.]

Phyciodes perilla perilla (Hewitson); Hall, 1930: 194.

Phyciodes perilla f. *acraeina* (Hewitson); Hall, 1930: 194; Forbes, 1945: 186.

Phyciodes perilla f. *aricilla* (Hopffer); Hall, 1930: 195; Forbes, 1945: 186.

Phyciodes perilla f. *lugubris* Röber; Hall, 1930: 195.

Phyciodes perilla ♀ f. *aberrans* Röber; Hall, 1930: 196; Forbes, 1945: 185.

Phyciodes perilla ♀ f. *pellenea* Röber; Hall, 1930: 196; Forbes, 1945: 185.

Phyciodes (*Tritanassa*) *perilla* f. *perilla* (Hewitson); Forbes, 1945: 185, 190.

? *Phyciodes pellenea crucifera* Bryk, 1953: 92. Holotype ♀, PERU: Roque (NR, Stockholm).

A polymorphic and variable species; ♂ forewing 23 mm, upperside black, wing bases usually more or less flushed red, discal band on forewing in various shades of red to yellow and cream-white; hindwing underside yellow-brown, base often flushed reddish, and rayed black along and between veins. ♀ larger, forewing 27–33 mm, upperside dark grey, base yellow-brown, discal band curved, yellow, slightly irregular; hindwing broadly yellow-brown, margin grey, lightly rayed dark along and between veins. For description of colour forms, see 'Discussion'.

Venation. Forewing v11 and v7–v10 arise together.

Genitalia. ♂ in dorsal view like *C. castilla*, slightly smaller, tegumen weakly chitinised, exposing on each side a broad plate of the inferior lamina of the scaphial extension; posterior border of juxta slightly irregular, convex; valve terminal process short, turned medially (slide no. 627). ♀ ductus short, bursal support with strong ribs.

DISTRIBUTION. Ecuador, Peru, Bolivia, ? Colombia.

DISCUSSION. The polymorphism has not been investigated as far as I know. Hall (1930: 194) states 'forms are not geographically separated, although some are more prevalent in certain localities than others'. The principal colour forms are named as follows.

- 1, ♂ band of forewing pale yellow, bases of both wings broadly flushed red, f. *perilla*;
- 2, ♂ band of forewing and wing-bases red, f. *acraeina*;
- 3, ♂ band of forewing red, base of hindwing black, f. *aricilla*;
- 4, like *aricilla*, but band of forewing yellow (mimic of *Eueides aides* Stichel and *Archonias bella* (Cramer), f. *lugubris*;
- 5, ♀ forewing basal suffusion and band yellow, and vestigial yellow apical markings, f. *pellenea*;
- 6, forewing band and both wing bases yellow, colour extensive on hindwing, f. *aberrans*.

Castilia neria (Hewitson) comb. n.

(Figs 157, 444–446)

Eresia neria Hewitson, 1869c: 98; Hewitson, 1869a: 27; [1872]: [29], pl. [15], fig. 80. LECTOTYPE ♂, ECUADOR: Sarayacu (Buckley) (BMNH, Type no. Rh. 8572; Gabriel, 1927: 85), here designated [examined].

Phyciodes neria (Hewitson) Röber, 1914: 449; Hall, 1930: 197.

Phyciodes (Tritanassa) neria (Hewitson); Forbes, 1945: 185, 190.

♂ forewing 21 mm, upperside black, wide basal area orange-fulvous, hindwing black; underside forewing apex and all hindwing grey-brown, rayed black along and between veins. ♀ unknown.

Venation. Forewing v11 and stalk of v7–v10 arise together, beyond cell-end.

Genitalia. ♂ like *C. perilla*, tegumen short, scaphial extension fragile, membranous; posterior border of juxta rather prominent; terminal process of valve curved sharply medially; penis robust (slide no. 619).

DISTRIBUTION. Ecuador.

Castilia nortbrundii (Weeks) comb. n.

(Figs 158, 447–449)

Phyciodes nortbrundii Weeks, 1901: 359; Weeks, 1905: 96, pl. 42, fig. 1 (♂). 4 ♂ syntypes, BOLIVIA: Cochabamba district (MCZ, Cambridge).

Eresia nebrina Weymer, 1907: 19. Holotype ♂, BOLIVIA: Cochabamba (*Fruhstorfer*) (? MNHU, Berlin).

Phyciodes actinotina Röber, 1914: 449; pl. 91, row b [fig. 7] (as *Eresia*). ♂ syntype(s), BOLIVIA (depository unknown).

Phyciodes northbrundii Weeks; Hall, 1930: 197.

Phyciodes (Tritanassa) northbrundii Weeks; Forbes, 1945: 185, 190.

♂ forewing 19 mm, upperside black, large basal area and oblique subapical band orange-fulvous; hindwing discal area orange-fulvous; underside hindwing pale grey, rather faintly rayed dark brown along and between veins, sometimes a few small orange markings near base. ♀ unknown.

Venation. In forewing v11 arises from subcostal vein before end of cell. This is the normal arrangement found in other Phyciadini.

Genitalia. ♂ tegumen short, lateral walls of scaphial extension chitinised and projecting posteriorly; posterior border of juxta gently curved, saccus short, posterior process of valve long, slender, curved medially, harpe slender; in side view penis like *C. perilla* (slide no. 611).

DISTRIBUTION. Bolivia.

Castilia eranites (Hewitson) **comb. n.**

(Figs 159, 160, 450–452)

Eresia eranites Hewitson, [1857]: [43], pl. [22], figs 8–10; Godman & Salvin, 1882: 185; 1901: 673. LECTOTYPE ♂, COLOMBIA: Bogota ('New Granada') (BMNH, Type no. Rh. 8547; Gabriel, 1927: 46), here designated [examined].

Phyciodes eranites (Hewitson) Staudinger, 1885: 93; Röber, 1913: 446; Hall, 1929: 164; Forbes, 1945: 184, 190.

Eresia evanides [sic!] Hewitson; Röber, 1913: pl. 92, row c [fig. 5]; row d [figs 1, 2].

[*Eresia carme* Doubleday; Röber, 1913: pl. 92, row d [fig. 3]. Misidentification; aberrant specimen with unusual hindwing marking.]

Phyciodes eranites mejicana Röber, 1913: 446. Syntype(s), MEXICO: Presidio (depository unknown).

Phyciodes (*Eresia*) *eranites mejicana* Röber; de la Maza, 1978: 39–44, figs 2a, b, 3b.

♂ forewing 22 mm, upperside fulvous with black markings along costa and margins, defining a large basal and discal orange area, and smaller orange costal and submarginal spots; hindwing orange, borders black with prominent black macular band almost parallel with the outer margin, equally conspicuous on underside. ♀ larger, markings differ slightly, post-discal area of forewing spots more numerous, white.

Genitalia. ♂ apical section of valve slender, apex curved strongly inwards, harpe firmly chitinized, tegumen weakly chitinized, slightly conical, fragile, posterior border of juxta protruding posteriorly, forming an acute angle, saccus large, deeply cleft; penis straight, massive, ostium-keel small (slide no. 2587). ♀ genitalia, ductus short, bursal support large, posterior rib prominent.

DISTRIBUTION. Mexico, Costa Rica, Nicaragua, Salvador, Panama, Guatemala, Venezuela, Colombia.

Castilia fulgora (Godman & Salvin) **comb. n.**

(Figs 161, 453, 454)

Phyciodes fulgora Godman & Salvin, 1878b: 261; Godman & Salvin, 1882: 206, pl. 22, figs 17, 18; Röber, 1913: 445, pl. 90, row f [fig. 6]; Hall, 1929: 106; Forbes, 1945: 182, 190. LECTOTYPE ♂, COSTA RICA: Rio Sucio (*H. Rogers*) (BMNH, Type no. Rh. 8456; Gabriel, 1927: 52), here designated [examined].

Phyciodes levana Röber, 1913: 440, pl. 88, row h [fig. 7]. ♀ syntype(s), COSTA RICA: Orosi, 1280 m (*A. H. Fassl*) (depository uncertain).

♂ forewing 15 mm, like *C. fulgora* but smaller, outer margin slightly excavate, upperside dark brown bar on discoidal vein, a large oval postdiscal spot in s1b, s2 and s3, and a subapical costal bar before a very small, white apical spot; hindwing with a narrow orange transverse band tapering to v1b; underside hindwing pale brown with confused cryptic markings. ♀ similar, forewing upperside orange postdiscal spot expanded to form a wide postdiscal band; hindwing upperside white submarginal spot in s7 prominent.

Genitalia. ♂ in dorsal view rather narrow, tegumen and scaphial extension lightly chitinized; posterior border of juxta gently undulant, terminal process of valve curved medially, harpe slender; penis like *C. perilla* (slide no. 1021). ♀ not examined.

DISTRIBUTION. Seen only from Costa Rica.

Castilia fausta (Godman & Salvin) **comb. n.**

(Figs 162, 455)

Phyciodes faustus Godman & Salvin, 1897: 243; 1901: 680, pl. 108, figs 19, 20 (♂); Röber, 1913: 441; Hall, 1929: 79; Forbes, 1945: 181, 190. ♂ syntype(s), PANAMA: Chiriqui, ex *Staudinger* (MNHU, Berlin).

♂ forewing 15 mm, like *C. fulgora* but smaller, outer margin slightly excavate, upperside dark brown (black when fresh?), markings fulvous, spot at cell-end small; hindwing fulvous transverse band tapering to inner margin, submarginal lunules obscure excepting well-marked spot in s7; underside marbled light and dark brown. ♀ not seen.

Genitalia. ♂ in dorsal view like *C. fulgora*, tegumen shorter, scaphial extension not well defined, posterior border of juxta wide with small undulations; falces parallel, not oblique (slide no. 1345).

DISTRIBUTION. Panama (Chiriqui).

A rare species, two males only in BMNH.

Castilia ofella (Hewitson) **comb. n.**

(Figs 163, 456–458)

Eresia ofella Hewitson, [1864]: [18], pl. [9], figs 18, 19; Godman & Salvin, 1882: 189; 1901: 674. Syntype(s), COLOMBIA: 'New Granada' (E. Birchall Coll.; present depository uncertain, possibly in UM, Oxford; not recorded by Gabriel, 1927, but 'type' noted by Hall, 1929: 135, as being in BMNH).

Phyciodes ofella (Hewitson) Röber, 1913: 444, pl. 90, row f [fig. 3] (♂).

Phyciodes ofella ofella (Hewitson); Hall, 1929: 134.

? *Phyciodes ofella guaya* Hall, 1929: 135. Holotype ♂, ECUADOR (BM, Brighton) [paratype ♂ in BMNH examined].

Phyciodes (Tritanassa) ofella ofella (Hewitson); Forbes, 1945: 183, 185, 190.

Phyciodes (Tritanassa) ofella guaya Hall; Forbes, 1945: 183.

♂ forewing 19 mm, outer margin excavate, upperside black, markings white; small spot over cell-end, large postdiscal mark in s1b–s3 which is placed to continue the white transverse band of the hindwing, a few small spots near wing apex; hindwing upperside veins crossing white transverse band not pigmented; hindwing underside distal area marbled brown, a row of small, dark spots present in s1c, s2 and s3. ♀ similar.

Genitalia. ♂ in dorsal view with tegumen very short, scaphial extension greatly reduced; posterior border of juxta with low central prominence, apical process of valve very small; harpe slender; penis as in *C. perilla* (slide no. 1063). ♀ distinctive, ductus long, chitinised, bursal support of unusual shape, partly membranous.

DISTRIBUTION. Guatemala, Costa Rica, Panama, Colombia, Venezuela, Trinidad, ? Ecuador.

Castilia myia (Hewitson) **comb. n.**

(Figs 164, 459–461)

Eresia Myia Hewitson, [1874]: [17], pl. [9], figs 16, 17; Godman & Salvin, 1882: 188; 1901: 674.

LECTOTYPE ♂, MEXICO (BMNH, Type no. Rh. 8534; Gabriel, 1927: 84), here designated [examined].

Phyciodes myia (Hewitson) Röber, 1913: 444, pl. 90, row e [figs 4, 5].

Phyciodes myia myia (Hewitson); Hall, 1929: 136; Forbes, 1945: 183.

♂ forewing 18 mm, upperside black, markings white, like *C. ofella* but lacking white cell-spot, round postdiscal spot in sb1 and sb2 conspicuous; hindwing transverse band narrow, crossed by black veins, small submarginal spot conspicuous in s7; forewing underside base orange-yellow; hindwing underside marbled brown, with a row of dark submarginal lunules in s1c–s5. ♀ similar.

Genitalia. ♂ like *C. eranites*, tegumen fragile, posterior border of juxta wide with small undulations, valve tapering posteriorly to slender, upturned apex, rather sharply curved, harpe gently curved (slide no. 2586). ♀ genitalia: bursal duct chitinised, support well defined with prominent ribs.

DISTRIBUTION. Mexico, Honduras, Nicaragua, Guatemala.

Castilia griseobasalis (Röber) **comb. n., stat. n.**

(Figs 165, 462, 463)

Phyciodes myia f. *griseobasalis* Röber, 1913: 444. Syntype(s), [CENTRAL AMERICA] (depository unknown).

Phyciodes myia griseobasalis Röber; Hall, 1929: 137.

Phyciodes (Anthanassa) myia griseobasalis Röber; Forbes, 1945: 183, 190.

♂ forewing 15 mm, variable, upperside like *C. myia*, but smaller, pale markings reduced, especially the white postdiscal spot in s1b–s2; hindwing white transverse band narrow; forewing underside base yellow-grey.

Genitalia. ♂ like *C. myia*, in dorsal view posterior section of valve conspicuously long, harpe straight, long and slender (slide no. 1038).

DISTRIBUTION. Guatemala, El Salvador, Costa Rica, ? Mexico.

DISCUSSION. Hall states that *C. griseobasalis* replaces *C. myia* in western Guatemala, El Salvador and Costa Rica. The distinction between the two in size and markings is far from striking, but it appears to be constant; I have not seen specimens with intermediate characters.

Castilia angusta (Hewitson) **comb. n.**

(Figs 166, 464-466)

Eresia angusta Hewitson, [1868]: [34], pl. [19], figs 58, 59. LECTOTYPE ♂, locality unknown (BMNH, Type no. Rh. 8535; Gabriel, 1927: 13), here designated [examined].

Phyciodes angusta (Hewitson); Röber, 1913: 445, pl. 92, row h [fig. 6] (♂); Hall, 1929: 137.

Phyciodes (Tritanassa) angusta (Hewitson); Forbes, 1945: 185, 190.

♂ forewing 14 mm, narrow, elongate, outer margin weakly excavate, upperside black, markings pale yellow, small narrow bar at cell-end, round postdiscal spots in s2 and s3 prominent; hindwing upperside with transverse band and isolated submarginal spot in s7, submarginal lunules vestigial if present. ♀ similar.

Genitalia. In dorsal view ♂ organs wide, tegumen fragile, posterior border of juxta very prominent, valve tapering, rather massive, apex inclined medially, harpe slender; penis ostium-keel present, morula small (slide no. 2762). ♀ bursal duct chitinised, support well formed, scutum large.

DISTRIBUTION. Colombia, Ecuador, Peru, Bolivia, Brazil (Mato Grosso), Argentina (Tucumán).

Castilia chinantlensis (de la Maza) **comb. n.**

(Figs 171, 172)

Phyciodes (Eresia) chinantlensis de la Maza, 1978: 39, figs 1a-c, 3a [3, 4-cover]. Holotype ♂, MEXICO: La Esperanza, Sierra de Juarez, Oaxaca, 1750 m, 27.xi.1976 (*R. de la Maza*) (Museo de Historia Natural de la Ciudad de Mexico) [1 ♂, 1 ♀ paratypes examined in BMNH].

De la Maza, in his original description, provides good photographs of the adults (including colour figures of both sexes on the rear cover of the journal issue), and a dorsal view of the male genitalia.

Genitalia (based on examination of paratype in BMNH). ♂ very close to *C. eranites*; in dorsal view the tegumen is well defined, nearly quadrilateral; valve less curved posteriorly; posterior margin of juxta appears evenly and gently convex.

DISTRIBUTION. Mexico (known only from the Sierra de Juarez, Oaxaca).

DISCUSSION. *C. chinantlensis* is compared by de la Maza with *Eresia phillyra*, and particularly with *C. eranites* (for the Mexican population of which de la Maza retains the subspecies *mejicana*). On account of the close similarity to *C. eranites*, *chinantlensis* is transferred here to *Castilia*.

JANATELLA **gen. n.**

Type-species: *Eresia leucodesma* Felder & Felder. Gender: feminine.

Rather small butterflies, forewing outer margin straight or slightly convex, never excavate, uppersides black with white markings; forewing with costal mark beyond cell and large white mark on centre of inner margin; hindwing upperside discal band prominent; underside dark ocellar postdiscal spots well defined in s3, s4 and s5. Sexes similar.

Genitalia. ♂ in dorsal view with tegumen elongate, not tapered, scaphial extension short, posterior angles well defined, each bearing 3-5 teeth or small hooks (Fig. 467); saccus single (lingulate) with shallow apical notch in *J. hera*, posterior border of juxta gently convex, penis slender, morula not prominent, ostium-keel very small (possibly absent in the type-species). ♀ ductus not chitinised, bursal support attached to a low elevation, ribs little developed.

DISTRIBUTION. Nicaragua, Panama, northern South America, St. Vincent and Trinidad.

DISCUSSION. The three species *C. leucodesma*, *C. hera* and *C. fellula* were united by Forbes (1945: 189) as his group 6 (*Eresia*). The facies of all are very different from other species in the *Eresia* series, and by the shape of the dorsal structures of the male genitalia, appear allied more closely to *Phyciodes*. All are clearly related and they form a small group most suitably placed in a separate genus.

Key to species of *Janatella* (based on Forbes, 1945: 161)

- 1 Base of forewing beneath light buff, ground colour of hindwing white, except towards the margin 2
- Base of forewing underside ash grey, ground colour of hindwing dull grey; forewing rarely, if ever, with white in cell *fellula* (p. 159)
- 2 White the dominant colour, extending over more than half of hindwing, and nearly half of forewing (Colombia to Trinidad) *leucodesma* (p. 158)
- White markings limited to spots on forewings and a median band on the hindwings (Guianas) *hera* (p. 158)

***Janatella leucodesma* (Felder & Felder) comb. n., stat. rev.**

(Figs 167, 467-470)

Eresia leucodesma Felder & Felder, 1861: 103; 1867: 394, pl. 50, figs 11, 12. LECTOTYPE ♀, VENEZUELA: Caracas Province, Moritz (BMNH, specimen ex Felders' Coll., ex Rothschild Coll.), here designated [examined].

Eresia cincta Edwards, 1864: 502. ♂ syntypes, U.S.A.: 'Texas, Florida' [C. America?] (lost) (see Brown, 1966: 428).

Phyciodes leucodesma (Felder & Felder) Godman & Salvin, 1882: 197; Staudinger, 1885: 92, pl. 36; Röber, 1913: 444, pl. 90, row f [figs 1, 2]; Hall, 1929: 132.

Phyciodes (Eresia) ianthe leucodesma (Felder & Felder); Forbes, 1945: 161, 189.

Anthanassa cincta Edwards; Holland, 1947: 141. [Holland indicates that this taxon is probably identical with *leucodesma*.]

Anthanassa (?) *leucodesma* (Felder & Felder); Holland, 1947: 141, pl. 73, fig. 7.

♂ forewing 16 mm, upperside wing-base and costa black to postdiscal costal bar, a large white area extends from costal margin to meet costal mark; hindwing upperside white except extreme base and black marginal border. ♀ similar, often slightly larger.

Genitalia. ♂ in dorsal view, posterior angles of long, scaphial extension each bears 5 small teeth curved medially, saccus single, valve apex with 2 terminal teeth (slide no. 1349). ♀ genitalia, bursal duct incompletely chitinised.

DISTRIBUTION. Trinidad, Island of St. Vincent, Panama, Nicaragua, Colombia, Venezuela.

DISCUSSION. In spite of the wide distribution, the species is remarkably stable in external characters and genital structure.

***Janatella hera* (Cramer) comb. n.**

(Figs 168, 471, 472)

Papilio hera Cramer, [1779]: 108, pl. 253, figs F, G. Syntype(s), [SOUTH AMERICA] ('Sierra Leona') (depository unknown).

Papilio ianthe Fabricius, 1781: 80. Syntype(s), FRENCH GUIANA: Cayenne ('Mus Dom Yates', presumably lost, illustrated in 'Jones Icones', Oxford, not listed by Zimsen). [Junior homonym of *Papilio ianthe* Pallas, 1771.]

Phyciodes hera (Cramer) Kirby, 1871: 175; Röber, 1913: 443, pl. 90, row e [figs 2, 3].

Phyciodes ianthe (Fabricius) Hall, 1929: 133.

Phyciodes (Eresia) ianthe ianthe (Fabricius); Forbes, 1945: 161, 189.

♂ forewing 20 mm, upperside markings like *Castilia ofella*, but outer margin of wing not excavate, hindwing upperside white submarginal spot absent (constantly present in *C. ofella*). ♀ similar.

Genitalia. ♂ like *J. fellula*, dorsal structures elongate, in dorsal view scaphial angles rather densely chitinised with 3-4 large teeth, saccus apex weakly notched (slide no. 830). ♀ not examined.

DISTRIBUTION. French Guiana, Surinam.

NOTE. The excellent figure in Jones's unpublished Icones (Hope Department of Zoology, Oxford) shows *ianthe* Fabricius to be identical with *hera* Cramer.

Janatella fellula (Schaus) comb. n.

(Figs 169, 473, 474)

Phyciodes fellula Schaus, 1902: 393. Holotype ♂, COLOMBIA (USNM; Type no. 5885) [examined]. [*Phyciodes abas* (Hewitson); Röber, 1913: 443, pl. 90, row e [fig. 6] (♂); Hall, 1929: 115; Forbes, 1945: 161, 189. Misidentifications.]

♂ forewing 17–19 mm, variable, upperside black, markings white, cell-spot very small, larger spots in s2 s3 and s4 in oblique series; hindwing upperside white transverse band 2.0–2.5 mm, extends from s7 to inner margin. ♀ similar.

Genitalia. ♂, in dorsal view, tegumen wide, elongate, well chitinised, scaphial terminal angles armed with 3 or 4 teeth, posterior border of juxta gently convex, saccus variable, wide, tapering rapidly, or longer and more uniform in width in some specimens (slide no. 101). ♀ genitalia like *J. leucodesma*, ductus partly chitinised with goblet-shaped bursal support.

DISTRIBUTION. Ecuador, Colombia.

NOTE. The wing markings of this species are very like those of *Telenassa abas*, in which the white transverse band on the hindwing upperside extends only from s6 to s1b, i.e. it does not quite reach to the inner margin.

MAZIA gen. n.

Type-species: *Melitaea amazonica* Bates. Gender: feminine.

In both sexes wings broad, appearing large in comparison with the thorax and abdomen; upperside ground-colour fulvous with delicate black markings, arranged in series parallel with the wing-margins. Antennae less than half the length of forewing, club slender, cylindrical (Fig. 491). Palpi elongate, slightly ascending, terminal segment acicular.

Venation. Forewing cell closed, v11 arising beyond cell-end from stalk of v7–10; hindwing cell open.

Genitalia. ♂ in dorsal view, tegumen very short, a bunch of strong spines arising at each posterior angle of the scaphial extension, valve in side view wide, posterior process short with 2 terminal teeth, posterior margin of juxta gently convex; saccus elongate, apex notched; penis straight, morula inconspicuous. ♀ genitalia, ductus bursae appears to be firmly chitinised as a saccular structure with bursa attached by a membranous collar, unlike the arrangement present in all other genera.

DISCUSSION. The single species, *M. amazonica*, has strongly divergent characters, not only in the structure of antennae, palpi and in venation, but also the wing-markings, which show a pattern dissimilar to that of any other known species. Forbes (1945) placed *amazonica* as the sole species in his *Phyciodes* (*Eresia*) group 7. The distribution is confined to the Amazon Region, but quite extensive, reaching the eastern areas of Ecuador and Peru.

Mazia amazonica (Bates) comb. n.

(Figs 170, 475–479)

Melitaea amazonica Bates, 1864b: 190. LECTOTYPE ♂, BRAZIL: Tapajos (*H. W. Bates*) (BMNH, Type no. Rh. 8522; Gabriel, 1927: 11), here designated [examined].

Phyciodes amazonica (Bates) Staudinger, 1885: 91, pl. 36 (♀); Röber, 1913: 435, pl. 89, row b [figs 8, 9] (♂); Hall, 1929: 62, pl. 3, fig. 3 (genit.).

Phyciodes (*Eresia*) *amazonica* (Bates); Forbes, 1945: 161, 189.

♂ upperside bright fulvous, markings black, striae arranged partly in series parallel with the black outer margins of the wings, hindwing with a row of postdiscal dots; underside yellowish, markings as on upperside but grey, series more complete. ♀ similar.

Genitalia. As described above.

DISTRIBUTION. Brazil (including Mato Grosso), E. Peru, Ecuador.

Species incertae sedis

Phyciodes melini Bryk

Phyciodes melini Bryk, 1953: 88. Holotype ♀, PERU: Roque, 6.iv.1925 (NR, Stockholm)

Phyciodes metharmeoides Fassl

Phyciodes metharmeoides Fassl, 1922: 38. Holotype ♀, BRAZIL: 'Innern von Teffe' (depository unknown).

Phyciodes rima Hall

Phyciodes rima Hall, 1929: 79. Holotype ♂, SURINAM ('interior') (C. W. Ellacombe) (BMNH) [examined].
Phyciodes (Tritanassa) rima Hall; Forbes, 1945: 190.

This taxon is based on a single specimen, now lacking the abdomen. It probably belongs to the genus *Telenassa*.

Phyciodes mirabilis Hayward

Phyciodes mirabilis Hayward, 1967: 13–15, fig. Holotype ♀, ECUADOR: Puyo, ix.1960 (*J. Foerster*) (IML, Tucumán).

Phyciodes eucrasia Zikan

Phyciodes eucrasia Zikan, 1937: 385. 1 ♂, 2 ♀ syntypes, BRAZIL: São Gabriel, Rio Negro, viii, is, x (MNRJ, Rio de Janeiro).

Phyciodes chinchipensis Hayward

Phyciodes chinchipensis Hayward, 1964a: 63, fig. Holotype ♂, PERU: Rio Chinchipe, afluente norteño del Rio Marañón, 500–700 m (*W. Weyrauch*) (IML, Tucumán).

This species is not represented in the BMNH collection. It is a small butterfly, ♂ wing expanse 20–22 mm, ♀ 23–24 mm. On the upperside the ground colour is yellow, markings black, with a wide postdiscal area of the forewing with small yellow spots and markings; on the hindwing upperside the postdiscal series of spots is rather prominent, as seen from the original figure. Hayward considered *P. chinchipensis* to be closely related to *Phystis simois*. The genitalia have not been figured.

Supplement on certain genera of Melitaeini

The genus *Gnathotriche*, and the closely related genus *Gnathotrusia*, were not included in my descriptive account of the American *Chlosyne* and related genera (Higgins, 1960). This omission is corrected here, and the butterflies described in similar style and detail. Most of the species were included by Hall (1928b–1930) in *Phyciodes*, but Forbes (1945) corrected this error, grouping them in *Gnathotriche*. The four species involved, together with the small genus *Higginsius*, form a group of special interest, divergent from all other American Melitaeini, although the usual tribal characters are present. Outstanding group characters include the unusual venation of the forewing and the structure of the male genitalia, which are generally elongate, the posterior section of the valve very slender, curved and tapering to a pointed apex. The species all occur in Colombia, Venezuela and N. Peru. In *Gnathotrusia*, wing-markings in the male are mimetic and without any value to show relationships, but the genitalia structure shows, as does that of *Gnathotriche*, an astonishing similarity in general structure, and in several details, to the genitalia of *Didymaeformia didyma* and its allies, with extensive Palaearctic distributions. The similarity includes the shape of the tegumen, the presence of brachia (sub-unci), and the shape of the valve and harpe. Within the subfamily these features are so unusual that a real relationship must be accepted to exist between these species and the *didyma*-group, which suggests very wide dispersal of the *didyma* precursors at some distant epoch.

GNATHOTRICHE Felder & Felder

Gnathotriche Felder & Felder, 1862b: 420, *nota*. Type-species: *Euterpe exclamationis* Kollar, by monotypy.

Rather small or medium-sized butterflies, forewing outer margin excavate below v5; palpi ascending, middle segment slightly inflated and with dense long black hairs, terminal segment acicular. Upperside ♂ markings dark brown with white or pale yellow spots. The females differ.

Venation. Forewing v10 arises near v11 and before cell-end, branching to v9 running to wing-apex, v8 running to outer margin with v7 branching at about one-third of its length; beyond v10 the subcostal continues as first discoidal vein with branch as v6, then continues as middle discoidal vein with branch as v5, and then continues as lower discoidal vein to meet the median vein at v4. Hindwing venation normal, with cell open.

Genitalia. ♂, in dorsal view, tegumen weakly chitinised, narrow, tapering, terminal section membranous, posterior border of juxta conical (*exclamationis*) or rounded (*sodalis*), lingulae densely chitinised, saccus cleft, valve elongate, the posterior section slender, strongly curved inwards and tapering gradually to a single point, the saccular element well defined with a small harpe directed forwards; penis slender, slightly longer than saccus plus valve, dilated beyond manica, then tapering to a gaping ostium, lacking ostium crest and morula.

DISTRIBUTION. Colombia, Venezuela.

The species are said to inhabit forests in hilly and mountainous country; they do not occur at high altitudes.

Gnathotriche exclamationis (Kollar)

(Figs 480–483)

Euterge exclamationis, [1849]: 359, pl. 45, figs 5, 6. ♂ syntype(s), VENEZUELA (NM, Vienna).

Gnathotriche exclamationis (Kollar) Felder & Felder, 1862b: 420, *nota*; Staudinger, [1885]: 95, pl. 36; Röber, 1914: 454, pl. 88, row g [figs 2–5] (♂, ♀); Forbes, 1945: 190; 1946: 196, fig. 1 (genit.).

Eresia elaea Hewitson, 1869a: 25 [index]; [1872]: [29], pl. [15], figs 81, 82. Lectotype ♀, ECUADOR: Rio Verde (*Buckley*) (BMNH, Type no. Rh. 8581; Gabriel, 1927: 43), here designated [examined].

Eresia eleates Weymer, 1907: 18, pl. 2, fig. 5. Holotype ♀, COLOMBIA, 'coll. Fruhstorfer' (depository uncertain).

Phyciodes vanessoides Röber, 1914: 449, pl. 91, row b [fig. 5]. ♀ syntype(s), COLOMBIA: Bogota (NMHU, Berlin).

Phyciodes eleates (Weymer) Röber, 1914: 449, pl. 91, row a [figs 6, 7].

Gnathotriche exclamationis f. *eresia* Röber, 1914: 454, pl. 88, row g [fig. 6]. ♀ syntypes, COLOMBIA and VENEZUELA (MNHU, Berlin).

Gnathotriche exclamationis ♀ f. *eresia* Röber, 1946: 196.

Gnathotriche exclamationis ♀ f. *eleates* (Weymer); Forbes, 1946: 196.

Gnathotriche exclamationis ♀ f. *elaea* (Hewitson); Forbes, 1946: 196.

Gnathotriche exclamationis ♀ f. *vanessoides* (Röber); Forbes, 1946: 196.

♂ forewing 19 mm, apex truncate, outer margin excavate, upperside black, markings cream-white, a short basal streak in cell and a spot at cell-end, postdiscal costal bar of 3 elongate spots, and other postdiscal and submarginal spots; hindwing upperside a wide transverse band from costa to inner margin, crossed by dark veins. ♀ slightly larger, variable and differs greatly. In one form similar to ♂ but all markings orange-fulvous; more often wing-apex rounded, outer margin of forewing less excavate, upperside black with an irregular discal cream-white bar on forewing upperside, designated 'typical' by Röber. In a third female form (f. *eresia* Röber), the upperside is black, except a wide fulvous area on the forewing extending from the base along inner margin and costa about half-way to apex.

Genitalia. ♂, in dorsal view, posterior border of juxta conical; harpe of valve well developed. ♀ ostium bursae open, leading directly to bursal duct, bacilli weakly chitinised, bifid, but accompanied by numerous membranous fibrils to compose a single united rod, scutum not large.

DISTRIBUTION. Colombia, Venezuela.

DISCUSSION. In females the variation is very great and specific attribution is very largely a matter of guesswork.

Gnathotriche sodalis Staudinger

(Figs 484–486)

Gnathotriche sodalis Staudinger, [1885]: 95; Röber, 1914: 454, pl. 88, row g [figs 7, 8] (♂); Forbes, 1945: 190; 1946: 196. ♂ syntypes, COLOMBIA: Cauca Valley (MNHU, Berlin).

♂ forewing 20 mm, outer margin deeply excavate; ground-colour brown, markings yellow, rather obscured by brown scales, spot in mid-cell and at cell-end, discal spots in s1b, and at bases of s2 and s3, costal bar of 4 or 5 short stripes, submarginal series of spots often incomplete, but a white spot in s6 constant; hindwing upperside with 4 or 5 small discal spots forming a broken transverse band not suffused brown, postdiscal and submarginal markings vestigial. ♀ not known.

Genitalia. ♂ densely chitinised, in dorsal view tegumen fragile, easily distorted, posterior border of juxta semicircular, prominent, harpe very small; penis slender, as long as valve, ostium crest prominent (?everted), morula absent.

DISTRIBUTION. Colombia (Cauca Valley).

NOTE. *G. sodalis* appears to be a very local and rare species. Seven males in the BMNH are all from Staudinger, ex Godman & Salvin, clearly part of the original type-material. The species is not represented in Hall's collection.

GNATHOTRUSIA gen. n.

Type-species: *Eresia mundina* Druce. Gender: feminine.

Butterflies of medium size, palpi like *Gnathotriche*, hairy, terminal segment acicular; forewing apex rounded, outer margin straight. Upperside markings mimetic of *Actinote* species, polymorphic, underside like *Gnathotriche*, apex of forewing and all hind wing greyish, lined black along and between veins.

Venation. Like *Gnathotriche* but in forewing v5 arises close to v6 so that middle discocellular vein is shortened, but remains easily identifiable.

Genitalia. Male like *Gnathotriche* but differ in the densely chitinised conical tegumen, produced posteriorly to terminate abruptly; differs also in presence of prominent, cylindrical brachia, strongly chitinised, their medial borders armed with fine spines; saccus cleft.

DISTRIBUTION. Restricted to Colombia and N. Peru.

Gnathotrusia mundina (Druce) comb. n.

(Fig. 487)

Eresia mundina Druce, 1876: 221, pl. 18, fig. 4. Holotype ♂, PERU: Huiro, Santana Valley (*H. Whitely*) (BMNH, Type no. Rh. 8570; Gabriel, 1927: 83), [examined].

Phyciodes fallax Staudinger, 1885: 94. 1 ♂, 3 ♀ syntypes, PERU: Chanchamayo (MNHU, Berlin).

Phyciodes rosina Dognin, 1888: 48, fig.; Röber, 1914: 449. Lectotype ♂, ECUADOR: 'Numbala River' ('environs de Loja' on specimen) (BMNH) here designated [examined]. [Specimen bears Dognin's M/S 'type' label.]

Eresia crina Schaus, 1902: 392. Holotype, ECUADOR (USNM, Type no. 5884) [examined].

[*Eresia acraea* Hopffer; Röber, 1913: pl. 92, row f [fig. 3]. Misidentification.]

Phyciodes erebia Röber, 1914: 449, pl. 91, row b [fig. 6]. LECTOTYPE, PERU: Cushi, Huanuco province, 1900 m, (*W. Hoffmans*) (BMNH) here designated [examined]. [Specimen bears Röber's M/S determination label.]

Phyciodes hopfferi Röber, 1914: 449; pl. 92, row f [fig. 3] (as *Eresia acraea*). Syntype(s), PERU (depository unknown).

Phyciodes crina (Schaus) Röber, 1913: 448.

Phyciodes mundina (Druce) Röber, 1914: 450.

Phyciodes mundina peraea Hall, 1928a: 13. Holotype ♂, ECUADOR (BMNH) [examined].

Phyciodes mundina f. callianira Hall, 1930: 200. Holotype ♂, PERU (BM, Brighton) [examined].

Phyciodes mundina mundina (Druce); Hall, 1930: 198.

Phyciodes mundina f. hopfferi Röber, Hall, 1930: 199.

Phyciodes mundina f. fallax Staudinger; Hall, 1930: 199.

Phyciodes mundina f. rosina Dognin; Hall, 1930: 200.

Phyciodes mundina f. crina (Schaus); Hall, 1930: 201.

Phyciodes mundina f. erebia Röber; Hall, 1930: 201.

Phyciodes mundina f. peraea Hall; Hall, 1930: 201, pl. 2, fig. 7 (♂).

Phyciodes mundina f. testacea Hall, 1935: 221. LECTOTYPE ♂, BOLIVIA: Coroico (BMNH), here designated [examined: Hall stated 'type' to be from Coroico, in BM; I have labelled middle specimen of 3 from Coroico as lectotype, no specimens having been labelled by Hall].

Gnathotriche mundina (Druce); Forbes, 1945: 141–5, 190.

? *Phyciodes erebia mima* Bryk, 1953: 90. Holotype ♂, PERU: Roque (NR, Stockholm).

♂ forewing 22–23 mm, upperside black, polymorphic, markings most variable, orange-fulvous, rosy red, pink etc.; in nominate form forewing a wide orange-red postdiscal bar extends from costa to s3; hindwing upperside gleaming blue-black, underside, all veins lined sooty-black; in f. *hopfferi*, upperside forewing basal area orange-fulvous, hindwing with basal area of same colour; in f. *peraea*, forewing upperside postdiscal band narrow, buff, running to s1b, basal colour absent from both wings; f. *rosina* is like *hopfferi*, but with upperside markings rose-red. These and other variants occur at random in individual specimens, and usually an obvious model in *Actinote* can be recognised.

Genitalia. ♂ in dorsal view like *Gnathotriche exclamations*, but in dorsal view tegumen large, an elongate conical shape; brachia prominent.

DISTRIBUTION. Restricted to Colombia and N. Peru.

Gnathotrusia epione (Godman & Salvin) **comb. n.**

(Figs 488, 489)

Eresia epione Godman & Salvin, 1878b: 263. Lectotype ♂, COLOMBIA: Antioquia (*Salmon*) (BMNH, Type no. Rh. 8571; Gabriel, 1927: 46), here designated [examined].

Phyciodes epione (Godman & Salvin) Staudinger, 1885: 94; Röber, 1914: 449, pl. 91, row b [fig. 4] (as *Eresia*).

Phyciodes styx Staudinger, 1885: 94. 10 syntypes, COLOMBIA: Antioquia (MNHU, Berlin).

Eresia callianthina Hall, 1921: 279. 2 [♀] syntypes, COLOMBIA: Santa Elena, 2900 m (BM, Brighton).

Phyciodes epione elenae Hall, 1928: 13. Holotype ♂, COLOMBIA: Santa Elena, 2900 m (BM, Brighton) [examined].

Phyciodes epione epione (Godman & Salvin); Hall, 1930: 202; Forbes, 1945: 190.

Phyciodes epione f. *styx* Staudinger; Hall, 1930: 203.

Phyciodes epione elenae Hall; Hall, 1930: 203, pl. 2, fig. 8 (♂).

Phyciodes callianthina (Hall) Hall, 1930: 203, pl. 2, fig. 9 (♀).

Phyciodes epione callianthina Hall; Forbes, 1945: 190.

♂ forewing 23 mm, upperside both wings gleaming metallic deep blue, shading to black along forewing costa and outer margins; hindwing inner margin bright red; underside black, apex of forewing and all hindwing shading to greyish, with black lines along and between veins. Wing-markings variable, in f. *styx* hindwing upperside inner margin black; in f. *elenae* similar with forewing underside with red basal area; f. *callianthina* has forewing upperside base red, underside red area extensive. ♀ illustrated by Hall (1930: pl. 2, fig. 9).

Genitalia. ♂ like *G. mundina*, in dorsal view elongate, tegumen firmly chitinised, domed with a narrow central extension ending abruptly, brachia stout, juxta wide, tapering to a rounded apex, lingulae very dense.

DISTRIBUTION. Restricted to Colombia.

HIGGINSIUS Hemming

Fulvia Higgins, [1959]: 162. Type-species: *Melitaea fasciata* Hopffer, by original designation. [Homonym of *Fulvia* Gray, 1853, and *Fulvia* Adams, 1957.]

Higginsius Hemming, 1964: 139. [Replacement name for *Fulvia* Higgins.]

The genus is defined, the species described, and anatomical characters figured in Higgins (1960: 460–462).

Important characters include forewing venation as in *Gnathotriche* and in hindwing v7 branches from subcostal vein some distance before the fork with v5 and v6; palpi conspicuous, long and very hairy. In the minute genitalia the tegumen is narrow, the apical section of the valve curved inwards, very slender and sharply pointed, the saccus small with shallow terminal notch.

DISTRIBUTION AND RELATIONSHIPS. The genus *Higginsius* includes two species (*H. fasciatus*, *H. miriam*) with restricted distributions in Ecuador, W. Colombia and probably in Venezuela. The curious wing-venation, the long, densely hairy palpi and the genitalic characters, with the

slender, pointed valve apex, all point to close relationship with *Gnathotriche*, in spite of the very different facies. The species are not mimetic or cryptic, and in *fasciata* the upperside wing-markings show the common ancestral pattern of black striae on a fulvous ground. Both species appear to be very local and rare. Females are unknown.

ANTILLEA Higgins

Antillea Higgins, [1959]: 164; Riley, 1975: 78-79, pl. 6. Type-species: *Papilio pelops* Drury, by original designation.

The genus is defined, the species are described and anatomical characters are figured in Higgins (1960: 462-465).

Important generic characters include forewing venation as in *Gnathotriche*. In the hindwing veins 5, 6 and 7 all arise from a common point on the subcostal vein; veins 1a and 1b are slightly displaced to make room for a hair-pencil. The minute genitalia are unusual, the tegumen very shallow, the valve in side view blunt, the harpe relatively large, and with a prominent sacculus near the blunt apex. The penis massive, with ostium-crest and vestigial morula. ♀ (a single specimen examined) appears to have a short, double bacillus.

In spite of the apparently primitive venation of the forewing, this genus does not agree well with the genus *Didymaeformia*. With several unusual and unique characters, the two species (*pelops*, *proclea*) are probably relics of great antiquity, and, without obvious relationship to any other extant group, difficult to place today. The ♀ examined cannot belong to the *Phyciodes* section, and I have included *Antillea* within the Melitaeini as an independent genus.

Review of the classification of the Melitaeinae

The publication of this account of the tribe Phyciodini, and of the genera *Gnathotriche* and *Gnathotrusia*, completes the study of the Melitaeinae, which was begun in the *Illustrated Catalogue of the Palaearctic Melitaea*, published by the Royal Entomological Society of London in 1941. This is, therefore, a suitable opportunity to review the conclusions reached then and in subsequent papers, and to examine the classification of the whole subfamily. In considering the relationships of the three principal tribes, I have commented upon species living in restricted habitats, divergent species, and especially upon such interesting features of distribution as specific and generic disjunctions. It is necessary to include a formal description of the subfamily, and a catalogue at tribal and generic levels. Roger Verity, who was the first entomologist to introduce subfamily status for the Melitaeinae, insisted that the large genus *Melitaea* required further division, and I agree with his suggestions. To make a more meaningful arrangement it is necessary to divide *Melitaea* into four generic groups. For one of these, the name *Mellicta* is now generally recognised; for the two remaining groups, suitable generic names are available, and these are now resurrected. A new genus, for which the name *Gnathotrusia* has been proposed above, is required for two species associated with the divergent *Gnathotriche* group of South America. No other taxonomic changes are suggested.

On the basis of the characters of the male and female genitalia, it is easy to recognise three major groups of tribal rank, and possibly a fourth tribe is required for the small genus *Atlantea*, the three species of which appear divergent in relation to all other genera. All species show the key family and subfamily characters, but at tribal level each group is entirely isolated. Species with intermediate or equivocal characters have not been seen. The tribes can be defined precisely as follows.

1	Male genitalia, saccus absent	EUPHYDRYINI
-	Male genitalia, saccus present	2
2	Female genitalia with bacillus	MELITAEINI
-	Female genitalia without bacillus	3
3	Female genitalia with bursal support	PHYCIODINI
-	Female genitalia without bursal support	? tribe

Check-list of tribes, generic groups, genera and species of the Melitaeinae

The type-species of genera are marked with an asterisk; junior synonyms are not included unless they are type-species.

EUPHYDRYINI Higgins (Holarctic)

EUPHYDRYAS Scudder**phaeton* (Drury)*HYPODRYAS* Higgins**maturna* (L.)*intermedia* (Ménétriés)*cynthia* (Denis & Schiffermüller)*iduna* (Dalman)*gillettii* (Barnes)*OCCIDRYAS* Higgins**ancia* (Doubleday)*chalcona* (Doubleday)*editha* (Boisduval)*colon* (Edwards)*EURODRYAS* Higgins**aurinia* (Rottemburg)*alexandrina* (Staudinger)*desfontainii* (Boisduval)*orientalis* (Herrich-Schäffer)

MELITAEINI Tutt (Holarctic and Neotropical)

MELICTA-group (Palearctic)*MELICTA* Billberg**athalia athalia* (Rottemburg)*athalia celadussa* (Fruhstorfer)*athalia ambigua* (Ménétriés)*deione* (Geyer)*parthenoides* (Keferstein)*aurelia* (Nickerl)*britomartis* (Assmann)*varia* (Meyer-Dur)*asteria* (Freyer)*centralasiae* (Wnukowsky)*rebeli* (Wnukowsky)*menetriési* (Caradja)*plotina* (Bremer)*alatauica* (Staudinger)*DIDYMAEFORMIA*-group¹ (Palearctic except *Poladryas*)*MELITAEA* Fabricius*avinovi* Sheljuzhko*arduinna* (Esper)**cinxia* (L.)*balba* Evans*minerva* Staudinger*pallas* Staudinger*turanica* Erschoff*agar* Oberthür*asteroidea* Staudinger*diamina diamina* (Lang)*diamina regama* Fruhstorfer

¹ Verity's genus *Didymaeformia* has not been accepted by most authors, partly because the designation of a type-species is somewhat ambiguous in the author's original introduction of the name (1950). It is, however, inconvenient to be without a generic name for *Papilio didyma* Esper and its many relatives in Central Asia. Verity's intention was perfectly clear and *Didymaeformia* Verity, 1950, is accepted here as a valid generic name, with type-species *Papilio didyma* Esper, as recorded by Hemming (1967).

(Note. The name is spelt *Didymaeformis* by Hemming, clearly a *lapsus calami*!)

- lukto* Evans
mimetica Higgins
tangigharuensis de Freina
romanovi Grum-Grshimailo
arcesia Bremer
balbita Moore
sindura Moore
amoenula Felder & Felder
jezabel Oberthür
bellona Leech
POLADRYAS Bauer
minuta (Edwards)
**pola* (Boisduval)
arachne (Edwards)
DIDYMAEFORMIA Verity
didyma-group
**didyma* (Esper)
deserticola (Oberthür) comb. n.
transcaucasica (Turati) comb. n.
persea (Kollar) comb. n.
afghana (Heydemann) comb. n.
abyssinica (Oberthür) comb. n.
gina (Higgins) comb. n.
mixta (Evans) comb. n.
casta (Kollar) comb. n.
yuenty (Oberthür) comb. n.
saxatilis (Christoph) comb. n.
didymina (Staudinger) comb. n.
didymoides (Eversmann) comb. n.
ala (Staudinger) comb. n.
pseudoala (Sheljuzhko) comb. n.
chitralensis (Moore) comb. n.
sutschana (Staudinger) comb. n.
acraeina (Staudinger) comb. n.
fergana-group
fergana (Staudinger) comb. n.
ambrisia (Higgins) comb. n.
lunulata (Staudinger) comb. n.
shandura (Evans) comb. n.
macarandica (Staudinger) comb. n.
athene (Staudinger) comb. n.
infernalis (Grum-Grshimailo) comb. n.
collina-group
collina (Lederer) comb. n.
turkmanica (Higgins) comb. n.
consulis (Wiltshire) comb. n.
kuchi (Wyatt) comb. n.
trivia (Denis & Schiffermüller) comb. n.
CINCLIDIA Hübner
**phoebe* (Denis & Schiffermüller)
aetherie (Hübner)
scotosia (Butler)
sibina (Alphéraky)
sarvistana (Wiltshire)
CHLOSYNE-group (Nearctic and Neotropical)
CHLOSYNE Butler
nycteis (Doubleday)
gorgone (Hübner)

harrisii (Scudder)
hoffmanni (Behr)
malcolmi (Comstock)
gabbii (Behr)
damaetas (Skinner)
neumeogeni (Skinner)
acastus (Edwards)
palla (Boisduval)
definita (Aaron)
marina (Geyer)
melitaeoides (Felder & Felder)
gloriosa Bauer
**janaïs* (Drury)
poecile (Felder & Felder)
erodyle (Bates)
melanarge (Bates)
lacinia lacinia (Geyer)
lacinia saundersi (Doubleday)
californica (Wright)
riobalensis Bauer
ehrenbergi (Geyer)
narva (Fabricius)
gaudealis (Bates)
hippodrome (Geyer)
rosita Hall
mariana Röber

THESSALIA Scudder

**leanira* (Felder & Felder)
theona (Ménétriés)
cynisca (Salvin)

TEXOLA Higgins

**elada* (Hewitson)
anomalus (Godman & Salvin)
coracara (Dyar)

DYMASIA Higgins

**dymas* (Edwards)

MICROTIA Bates

**elva elva* Bates
elva draudti Röber

GNATHOTRICHE-group (Neotropical—South American and Antillean)**GNATHOTRICHE** Felder & Felder

**exclamationis* (Kollar)
sodalis Staudinger

GNATHOTRUSIA gen. n.

**mundina* (Druce)
epione (Godman & Salvin)

HIGGINSIUS Hemming

**fasciatus* (Hopffer)
miriam (Dognin)

ANTILLEA Higgins

**pelops* (Drury)
proclea (Doubleday)

PHYCIODINI trib. n. (Nearctic and Neotropical)**PHYCIODES** Hübner

tharos (Drury)
**cocyta* (Cramer)
batesii (Reakirt)
campestris campestris (Behr)

campestris camillus Edwards
montanus (Behr)
mylittus mylittus (Edwards)
mylittus mexicanus Hall
mylittus thebais Godman & Salvin
pallidus (Edwards)
orseis Edwards
herlani Bauer
pictus pictus (Edwards)
pictus pallescens (Felder)
phaon (Edwards)
vesta vesta (Edwards)
vesta graphica (Felder)

PHYSTIS gen. n.

**simois simois* (Hewitson)
simois variegata (Röber)
 ? *chinchipensis* (Hayward)

ANTHANASSA Scudder

drusilla drusilla (Felder & Felder)
drusilla lelex (Bates)
drusilla alceta (Hewitson)
drusilla verena (Hewitson)
ptolyca ptolyca (Bates)
ptolyca amator (Hall)
ardys ardys (Hewitson)
ardys subota (Godman & Salvin)
dracaena (Felder & Felder)
phlegias (Godman & Salvin)
texana texana (Edwards)
 **cincta* Edwards; Scudder
texana seminole (Skinner)
alexon alexon (Godman & Salvin)
alexon subconcolor (Röber)
acesas (Hewitson)
nebulosa (Godman & Salvin)
argentea (Godman & Salvin)
atronia (Bates)
otanes otanes (Hewitson)
otanes sopolis (Godman & Salvin)
annulata sp. n.
crithona (Salvin)
fulviplaga (Butler)
hermas (Hewitson)
frisias (Poey)
tulcis (Bates)
dubia (Hall)
taeniata (Röber)
sosis (Godman & Salvin)
drymaea (Godman & Salvin)
sitalces (Godman & Salvin)
cortes (Hall)

DAGON gen. n.

pusillus (Salvin)
 **catula* (Hopffer)
morenus (Röber)
fontus (Hall)

TELENASSA gen. n.

**teletusa* (Godart)
burchelli (Moulton)

berenice (Felder & Felder)
signata (Hall)
abas (Hewitson)
jana (Felder & Felder)
elaphina (Röber)
nana (Druce)
nussia (Druce)
notus (Hall)
gaujoni (Dognin)
trimaculata (Hewitson)
flavocincta (Dognin)
catenaria (Godman & Salvin)
delphia (Felder & Felder)
sepulta (Hall)

ORTILIA gen. n.

**liriope* (Cramer)
gentina sp. n.
orthia (Hewitson)
orticus (Schaus)
sejona (Schaus)
velica velica (Hewitson)
velica durnfordi (Godman & Salvin)
zamora (Hall)
dicoma (Hewitson)
polinella (Hall)
ithra (Kirby)

TISONA gen. n.

**saladillensis saladillensis* (Giacomelli)
saladillensis clarior subsp. n.

TEGOSA gen. n.

**claudina* (Eschscholtz)
similis nom. n.
orobia (Hewitson)
fragilis (Bates)
infrequens sp. n.
ursula (Staudinger)
flavida (Hewitson)
tissoides (Hall)
pastazena (Bates)
guatemalena (Bates)
anieta anieta (Hewitson)
anieta cluvia (Godman & Salvin)
anieta luka subsp. n.
anieta serpia subsp. n.
nazaria (Felder & Felder)
etia (Hewitson)
nigrella (Bates)

ERESIA Boisduval

clara Bates
nauplius nauplius (Linnaeus)
nauplius extensa (Hall)
plagiata (Röber)
letitia letitia Hewitson
letitia ocellata (Röber)
lansdorfi (Godart)
sestia Hewitson
coela Druce
oblita (Staudinger)
carne carne Doubleday

- carne laias* Godman & Salvin
polina Hewitson
alsina Hewitson
cissia (Hall)
eutropia Hewitson
mimas (Staudinger)
quintilla Hewitson
poecilina Bates
melaina sp. n.
sticta Schaus
ithomioides ithomioides Hewitson
ithomioides pseudocelemina (Strand)
anomala sp. n.
nigripennis Salvin
emerantia Hewitson
moesta Salvin & Godman
phaedima Salvin & Godman
datis datis Hewitson
datis corybassa Hewitson
margaretha Hewitson
**eunice eunice* (Hübner)
eunice olivencia Bates
eunice esora Hewitson
etesiae (Hall)
erysice (Geyer)
casaphia Hewitson
mechanitis Godman & Salvin
pelonia Hewitson
phillyra Hewitson
aveyrona aveyrona Bates
aveyrona mylitta Hewitson
perna Hewitson
levina Hewitson
actinote Salvin
selene (Röber)
- CASTILIA** gen. n.
**castilla* (Felder & Felder)
occidentalis (Fassl)
perilla (Hewitson)
neria (Hewitson)
nortbrundii (Weeks)
eranites (Hewitson)
fulgora (Godman & Salvin)
fausta (Godman & Salvin)
ofella (Hewitson)
myia (Hewitson)
griseobasalis (Röber)
angusta (Hewitson)
chinantlensis (de la Maza)
- JANATELLA** gen. n.
**leucodesma* (Felder & Felder)
hera (Cramer)
fellula (Schaus)
- MAZIA** gen. n.
**amazonica* (Bates)

Tribe?

- ATLANTEA** Higgins
**perezii* (Herrich-Schäffer)

pantoni (Kaye)
tulita (Dewitz)
cryptadia Sommer & Schwartz

Distribution

The following account is not intended to be exhaustive, but the principal features of distribution of the Melitaeinae are described and some anomalous features are pointed out. Especially in the Palaearctic Region, the situation is complicated, and a serious difficulty arises in the absence of information and material from many parts of the U.S.S.R.

PALAEARCTIC REGION

The subfamily is represented by the two tribes Melitaeini and Euphydryini, with about 75 species widely distributed, forming an important faunal element. Four regions in this vast area are sufficiently distinct to need separate consideration.

European Region, including Europe with Russia to the Urals, NW. Africa and W. Asia (Pontic distribution area)

There is an important concentration of 22 species in W. Europe and NW. Africa, involving two faunal regions. Euro-Siberian elements are widespread in northern and central parts of the area, including the arctic, and on all mountains. Six genera are represented: *Melitaea* (*M. cinxia* and *M. diamina*); *Cinclidia* (*C. phoebe*) (see also Siberian Region below); *Didymaeformia* (*D. didyma*); *Mellicta*, the dominant genus (*M. athalia* with two major subspecies; *M. britomartis* occurs from Piedmont to Transbaical; two species, *M. asteria* and *M. varia* are endemic in the high Alps and central Apennines, two species, *M. parthenoides* and *M. aurelia*, fly at moderate altitudes in W. Europe, the latter rather widely distributed to Baltic countries and to the Caucasus); *Hypodryas* (*H. intermedia wolfensbergeri*, *H. maturna*, *H. iduna* not south of 60°N lat., *H. cynthia* only on the Alps and Balkan Mts. (also S. Caucasus?)); *Eurodryas* (*E. aurinia*).

Most of these species occur in suitable localities in S. Europe and in NW. Africa, with two additional species, *Eurodryas desfontainii* and *Cinclidia aetherie*, their ranges restricted to SW. Europe and Morocco, the latter also in Sicily. Although situated within the Mediterranean area, the taxonomic characters of these two species are closely related to the Euro-Siberian fauna. They are best placed as pre-glacial relicts (Atlanto-Mediterranean). *E. desfontainii* is closely related to *E. orientalis*, locally endemic in W. Asia. The distribution of *Cinclidia* is extensive (see below, E. Siberia).

There is an interesting situation with the two subspecies of *M. athalia*, identifiable by the distinctive characters of the male genitalia. In W. Europe the distribution of the eastern taxon *M. a. athalia* meets the western *M. a. celadussa* in central France. Here the two are known to breed together along a frontier that extends from the Atlantic to the Adriatic, producing individuals having male genitalia of intermediate character, forming a hybrid zone up to 40 miles wide. I have no doubt that the western *M. a. celadussa*, with typical Atlanto-Mediterranean distribution, is the original pre-glacial species, its range now reduced by the post-glacial invasion of *M. a. athalia*, a Siberian (Angaraland) element.

Ponto-Mediterranean species in S. Europe are few in number, as follows: *Melitaea arduinna* is local in the Balkans and in N. Greece; *Didymaeformia trivialis* is widespread in SE. Europe, with scattered colonies in N. and C. Italy, N. Spain and in Portugal. A single species occurs in NW. Africa, *D. deserticola* in S. Algeria and Tunisia.

In Asia Minor and to the east and south, there is a vast area, partly semi-desert, where the genus *Didymaeformia* is dominant at low and medium altitudes, often numerous in individuals, but the number of species is not large and includes *D. didyma* and *D. trivialis*, often common in northern areas (see p. 166). *D. deserticola macromaculata* is local in Syria, Lebanon and Israel. *D. perseae* is widely distributed, with several local races and marked seasonal variation. The range extends south to Oman in Arabia, *D. abyssinica*? (*D. a. scotti* Higgins) occurring in the mountains of Yemen and *D. a. abyssinica*, described from Ethiopia, but never recorded again from that country. The mountain fauna is remarkable for presenting several small species of

Melitaea, flying in rare widely distributed colonies, usually at rather high altitudes, as follows: *M. collina*, Syria, Lebanon, Iraq (Kurdistan); *M. turkmanica*, Turkmen S.S.R. ('Askabad'), Armenia (= *vedica*); *M. consulis*, Iran, S. Zagros, perhaps a subspecies of *M. turkmanica*. These three species are closely related. *D. saxatilis*, N. Iran (Mt. Demavend, Mt. Shahkuh, flying at 4,000 m). *Cinclidia sarvistana*, Iran, Zagros Mts at high altitudes (male genitalia very divergent).

Central Asia

In this region the Tian Shan, Pamirs and other great mountain ranges form a specialised biotope with the greatest concentration of Melitaeini in the Palaearctic region. *Didymaeformia didyma* and three related species fly in the western districts, but in general the western species disappear and their places are taken by other taxa endemic in central Asia. Among the most interesting is the *D. fergana*-group of seven species, most of which fly at altitudes of 2,500 m or more, in oreo-tundral biotopes, including *D. lunulata*, *D. shandura*, *D. ambrisia* etc. All are rare, their habitats strictly localised, but in all species the male genitalia are distinctive, with good specific characters. These stand apart from the western *D. didyma*, as a distinct endemic group within the genus. They are accompanied by four or five species of *Melitaea*, closely related to *M. cinxia*, the uppersides bright fulvous with delicate black markings. All are distributed at high altitudes on the Ala Tau, Changai, Pamirs etc., and extend into Afghanistan, each major mountain group having its special phenotype, but with the male genitalia similar in all cases. Of these, *M. minerva* is probably the most important, with a wide distribution in the Ala Tau, Pamirs, and Hindu Kush, the different races flying at various altitudes up to 3,000 m or more, with a confusing range of different phenotypes, variously graded by different authors as species or subspecies. *Cinclidia sibina* is widely distributed in E. Turkestan, Alai Mts., etc. In many ways Afghanistan is closely related to the Hindu Kush and Pamirs, with similar high mountains, but the butterfly fauna differs considerably. Five species are known which appear to be endemic to the area, all with restricted distributions as follows: *Melitaea avinovi* has been known for many years; *Didymaeformia kuchi* is a small species that flies at high altitudes; *D. afghana* data are scanty at present. In the southern districts, which lead into Baluchistan, *Melitaea lukto* and *M. mimetica* occur, flying at moderate levels, perhaps subspecies of a single taxon.

The Himalayas and Mongolia

In the west these mountains merge into the central Asian Karakorums and Hindu Kush in Ladak and Chitral. Two or three species of *Didymaeformia* occur here including *D. chitralensis*, which flies at moderate levels in the valleys. The principal interest lies in the small *Melitaea amoenula* (male forewing length 12 mm), which flies in Khema and Ladak at 3,500 m or more, and the larger *M. balbita* which occurs at lower levels. These are the most westerly representatives of a remarkable series of distinct but closely related races (? species) which occurs through the length of the Himalayas to the exclusion of other Melitaeinae. The series includes *M. sindura* in the north-west and *M. sikkimensis* in Sikkim and Nepal. Further east, in south-western Tibet, the series merges into *M. jezebel*, slightly larger, with the very distinct *M. bellona* at lower altitudes. In the Amdo region, the Himalayan races are represented by *M. arcesia* which flies in suitable localities near the Kuku Nor and northwards to the Changai Mts and Transbaicalia (Sajan and Kentei Mts). The entire series forms a 'Rassenkreis' which is remarkable among Palaearctic butterflies. The male genitalia of the different races vary in size but are similar in all other respects. Beyond India, the Chinese province of Yunnan in the extreme east of the Palaearctic region supports two divergent species, *M. yuenty* and *M. agar*, the latter extending into Tibet at high altitudes, with considerable racial variation. One other species inhabits the north of this inhospitable region, *M. romanovi*, about which there is little information.

Eastern Siberia, including N. China, Mongolia and N. Korea

Near Lake Baikal (100°E) the picture changes. While some of the western dominants are still to be found, more often their eastern ranges are continued by subspecies or closely related species across temperate Siberia, China and Mongolia to Korea and often to Japan. Six genera are present: *Melitaea*, with one species, *M. diamina protomedia*, Amur etc.; *Cinclidia*, with two species, *C. scotosia*, also in Mongolia and Japan, and *C. phoebe* whose range extends to N. China,

but probably it is not truly Siberian; *Didymaeformia* with two species, *D. didymoides*, Changai Mts, Kansu, Korea etc., and *D. sutschana*, Amur, Korea; *Mellicta* with five species, *M. athalia ambigua*, male genitalia with small subspecific characters, *M. britomartis amurensis*, Amur, Sutschan etc., *M. centralasiae*, Shigansk, Kentei Mts, Chingan Mts, etc.; *M. menetriesi*, Amur and Kamschatka, *M. plotina*, Ussuri, Amur (Bureja Mts), Transbaicalia (?). The known data of these species are not satisfactory, and it is not possible at present to record their individual ranges. Two other *Mellicta* species, *M. alatauica* and *M. rebeli*, from the Alatau and Altai Mts respectively, really belong to this group; as they are represented by only a few specimens, their true distribution is quite unknown. *Hypodryas*, with three species, *H. intermedia konumensis* from Sutschan and Korea, larger than western specimens, *H. iduna*, recorded from the far north, *H. maturna* recorded from S. and E. Siberia. *Eurodryas*, with one species, *E. aurinia siberica* from Transbaical, Mongolia, Kansu, Korea etc., very variable.

The generic list in E. Siberia closely resembles that of W. Europe. The genus *Cinclidia* is probably best regarded as Euro-Siberian. Five species are widely distributed in warm and temperate areas of the Palaearctic, as follows. *C. phoebe*: S. and C. Europe and eastwards to S. Siberia and N. China; *C. aetherie*: Morocco, Spain, Sicily; *C. sibina*: Turkestan, Thian Shan; *C. scotosia*: E. Siberia, N. China, Korea, Japan; *C. sarvistana*: S. Iran (Zagros Mts), very divergent. While the genus does not reach N. America, the *Chlosyne* series in the western mountains, by habitus and wing markings, appears more closely related to *Cinclidia* than to any other melitaeid genus.

NEARCTIC AND NEOTROPICAL REGIONS

There is no reason to suppose that the Eurasiatic continent has been other than a single united land mass throughout the development and dispersal of the present Melitaeine fauna. It is otherwise with the Americas. Across the Behring Straits North America has been connected many times with Asia. On the other hand, it has been separated by marine barriers from South America until junction occurred relatively recently in geological terms. The situation in Central America in the distant past appears to be uncertain, but the present Melitaeid fauna is distinctive. The Antillean archipelago, perhaps the remaining traces of a former continent, is still unconnected with the mainland. These archaic isolations of two, or perhaps three large continents, are reflected in the distribution and the character of the butterflies. With few exceptions the Palaearctic Melitaeine genera are absent from the American continents. An exception is *Hypodryas gillettii*, which occurs in the mountains of Wyoming and Montana, and is a close relative of the European *H. maturna*.

North America

The Euphydryini are well represented by four species of *Occidryas* in the western Mountains. These show great differentiation compared with the Eurasiatic series. *Hypodryas gillettii*, referred to above, is of great interest. It is the single representative within the subfamily of a truly Palaearctic Melitaeine genus present in America. *Euphydryas phaeton*, with eastern distribution, is not closely related to *Occidryas*. It is most divergent in wing markings, and the structure of the male genitalia suggests relationship to the European *Eurodryas aurinia*. The tribes Melitaeini and Phyciodini are both well represented, and again principally in the western areas and mountains, each with a single genus, *Chlosyne* and *Phyciodes* respectively. Although belonging to different tribes, the two genera have certain features in common in their American ranges. First, the genitalic characters and wing markings in each genus are almost identical in all species, so that generic identification is very easy but specific identification usually difficult. Secondly, all species of both genera have the common basic Melitaeine pattern of upperside wing markings, with black spots and striae on a fulvous ground. This pattern is rare further south, and almost non-existent south of Mexico. The situation is difficult to explain, since in both cases these northern populations probably represent dispersals from the more primitive populations in Central America (*Chlosyne*) and South America (*Phyciodes*). In both genera the almost complete lack of diversity in genitalia and in wing markings does not suggest an ancient origin. In North America there do not appear to be examples of the impressive specific disjunctions that are not uncommon in Eurasia, nor are there any isolated relict forms among the Melitaeinae. On the other hand

there are two unexpected continental disjunctions in *Hypodryas gillettii*, referred to above, and the Sonoran *Poladryas*, in my opinion a displaced Eurasiatic genus. Nor is there any basically allopatric Melitaeine group in North America; all genera are traceable to dispersal from neighbouring populations. The tropical region is usually considered to have its frontier in southern Mexico. Between this and Nearctic North America there is an important transitional area, continuous with the southern states of Arizona, Texas, New Mexico and S. California, forming the so-called Sonoran region. The situation here is exceptional, with vast areas of dry, semi-desert country and an interesting and individual butterfly fauna. Melitaeine butterflies in this region include the very small species of *Texola* and *Dymasia*, and *Thessalia leanira*, with its remarkable series of local forms or subspecies, each with rather grotesque facies and not obviously related to *Melitaea*. The structure of the genitalia in these interesting little species (valves with three terminal processes) shows them all to be members of the *Chlosyne* series, of which such tropical forms as *C. lacinia* and *C. janais* begin to appear. The Phyciodini are also well represented, especially species of the genus *Anthanassa*, very different taxonomically and in appearance from the typical *Phyciodes* that fly in North America.

Central and South America

These regions are taken together as their Melitaeine faunas are so similar. In Central America the genus *Chlosyne* attains its maximum tropical development with 16 species or more, in a compact group centred in Mexico and extending across Central America to Colombia and Venezuela. A single species, *C. lacinia*, with many confusing polymorphic forms, has extended its distribution northwards as an occasional migrant in the Sonoran region, and southwards to include Brazil and northern Argentina. This species is exceptional in showing normal family coloration of dark markings upon a fulvous ground in the local forms *californica* and *saundersi*, the latter widespread in many parts of South America, and treated with specific rank by many local entomologists. In Central and South America the Phyciodini, with 13 genera, is the dominant tribe, extending southwards to Bolivia and northern Argentina, forming the principal subject of this paper. Two small divergent genera, not members of the Phyciodini, occur in N. Peru, Bolivia and S. Colombia. Two of these, *Gnathotriche* and *Gnathotrusia*, are dealt with on pp. 160–163. Another genus, *Higginsius*, has a single species which flies in the same area, and appears equally out of place among the *Phyciodes* series. The genitalic characters and primitive type of wing venation suggest relationship with *Gnathotriche*, although the wing markings are quite different. In fact, in Central and South America, the very frequent modification of the wing markings to form cryptic or mimetic patterns has greatly reduced the taxonomic importance of wing markings in these Melitaeinae.

The Antilles

The subfamily is poorly represented with seven species, of which six are truly endemic, representing two, or perhaps three tribes. Of the two *Phyciodes* species, *P. phaon* is probably a recent introduction from the U.S.A., but the second, *P. frisia*, is endemic on each of the larger islands. The genus *Antillea*, with two very small species endemic on Jamaica, Cuba and Haiti, is probably best placed with *Melitaea*, but its characters are very divergent, and it is certainly unrelated to the American fauna. A third genus, *Atlantea*, is represented by a single species on each of the larger islands. The species are closely related to each other, but their characters, especially those of the females, are so unusual that I cannot place the genus in any tribal group. Satisfactory material, especially of the rare females, is not available for examination.

Considering the situation of these islands so close to mainland America, it is remarkable that there is so little evidence of relationship with the American Melitaeine fauna. The analysis suggests a highly individual fauna, distantly related to Europe.

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References

- Adams, M. J. & Bernard, G. I. 1979. Pronophilinae butterflies (Satyridae) of the Serranía de Valledupar, Colombia—Venezuela border. *Syst. Ent.* 4: 95–118.
- Aurivillius, P. O. C. 1882. Recensio critica Lepidopterorum Musei Ludovicae Ulrica. *K. svenska Vetensk Akad. Handl.* 19(5): 1–188, 1 pl.
- Bargmann, R. 1928. Neue exotische Falter. *Lepid. Rdsch.* 2: 234–236.
- Barnes, W. M. & McDunnough, J. 1917. *Check list of the Lepidoptera of boreal America*, ix + 392 pp. Decatur, Illinois.
- Bauer, D. L. 1975. Tribe Melitaeini, pp. 139–195. In Howe, W. H. (ed.), *The butterflies of North America*, xiii + 633 pp., 97 pls. Garden City, New York.
- Bates, H. W. 1864a. New species of butterflies from Guatemala and Panama, collected by Osbert Salvin and F. du Cane Godman, Esq. [part]. *Entomologist's mon. Mag.* 1: 81–85.
- 1864b. Contributions to an insect fauna of the Amazon valley. Lepidoptera, Nymphalidae. [part]. *J. Ent. Lond.* 2: 175–213.
- 1866. New species of butterflies from Guatemala and Panamá, Supplement. [part]. *Entomologist's mon. Mag.* 3: 133–136.
- Behr, H. 1863. On Californian Lepidoptera—no. III. *Proc. Calif. Acad. Sci.* 3: 84–93.
- Bergsträsser, J. A. B. 1780–1783. *Nomenclatur und Beschreibung der Insecten in der Grafschaft Hanau-Münzenberg* 4, 48 pp., pls. (col., unnumbered). Hanau.
- Boisduval, J. B. A. D. de, 1836. *Histoire naturelle des insectes. Species général des Lépidoptères*. 1: xii + 690 pp., 24 pls (forms part of Roret's *Suites à Buffon*). Paris.
- 1852. Lépidoptères de la Californie. *Anns Soc. ent. Fr.* (2) 10: 275–324.
- 1869. Lépidoptères de la Californie. *Anns Soc. ent. Belg.* 12: 5–28, 37–94.
- Boisduval, J. B. A. de & Leconte, J. 1833. *Histoire générale et iconographie des Lépidoptères et des chenilles de l'Amérique septentrionale* [published 1829–1937], [iv] + 228 pp., 78 pls. Paris.
- Brehme, H. H. 1913. A new aberration in *Phyciodes* (Lepid.). *Ent. News* 24: 194, 1 pl.
- Brown, F. M. 1966. The types of the nymphalid butterflies described by William Henry Edwards—part 2, Melitaeinae. *Trans. Am. ent. Soc.* 92: 357–468.
- Bryk, F. 1953. Lepidoptera aus dem Amazonasgebiete und aus Peru gesammelt von Dr. Douglas Melin und Dr. Abraham Roman. *Ark. Zool.* 5: 1–268.
- Butler, A. G. 1870. *Catalogue of diurnal Lepidoptera described by Fabricius in the collection of the British Museum*, v + 303 pp., 3 pls. London.
- 1872. Descriptions of new butterflies from Costa Rica. *Cistula ent.* 1: 72–90.
- 1874. *Lepidoptera exotica, or descriptions and illustrations of exotic Lepidoptera* (publ. 1869–1874), iv + [ii] + 189 pp., 64 pls, + index [v]. London.
- 1877. List of Lepidoptera recently collected by Mr. Walter Davis in Peru, with descriptions of a new genus and several new species. *Ann. Mag. nat. Hist.* (4) 20: 117–129.
- Butler, A. G. & Druce, H. 1872. Descriptions of new genera and species of Lepidoptera from Costa Rica. *Cistula ent.* 1: 95–118.
- Chapman, T. A. 1913. Mimicry (?) in *Erebia*s. *Proc. ent. Soc. Lond.* 1913: cvii–cx.
- Clerck, C. A. 1764. *Icones insectorum rariorum* (2), [8 + 3 pp.], 16 pls. Holmiae.
- Cockerell, T. D. A. 1913. Two new varieties of *Phyciodes camillus*, Edwards. *Entomologist* 46: 308–309.
- Comstock, J. A. 1927. *Butterflies of California*, 334 pp., 63 pls. Los Angeles.
- Cramer, P. [1775–6]. *De Uitlandsche Kapellen voorkomende in de drie waereldeelen Asia, Africa en America* 1: 2 frontispieces, [vi + xxx + 161 + 55 pp.], pls 1–96. Amsteldam & Utrecht.
- [1777]. *De Uitlandsche Kapellen . . .* 2, 151 pp., pls 97–192. Amsteldam & Utrecht.
- [1779–80]. *De Uitlandsche Kapellen . . .* 3, 176 pp., pls 193–288. Amsteldam & Utrecht.

- [1780]. *De Uitlandsche Kapellen* . . . 4 part, pp. 1–28, pls 289–304 [vol. 4 completed by C. Stoll]. Amsterdam & Utrecht.
- de Freina, J. J.** 1980. *Melitaea tangigharuensis* n. sp., eine neue Nymphalidenart für Afghanistan nebst vergleichender Betrachtung zur *M. sarvistana* Wiltshire, 1941 (Lepidoptera, Nymphalidae). *Atalanta*, Münsterstadt 11: 11–18, figs 1–9.
- de la Maza, R.** 1978. Una nueva especie del genero *Phyciodes* Hübner de Mexico (Nymphalidae). *Revta Soc. Mex. Lepid.* 4: 39–44, back cover.
- Dognin, P.** 1887. Notice sur la faune des Lépidoptères de Loja et environs (Équateur) et descriptions d'espèces nouvelles. *Naturaliste* (2) 9: 172–175, 188–190.
- 1888. Diagnoses de Lépidoptères nouveaux de l'Équateur. *Naturaliste* (2) 10: 48, 67–68.
- 1894. Lépidoptères nouveaux de Loja et environ. *Anns. Soc. ent. Belg.* 38: 680–687.
- dos Passos, C. F.** 1935. Some butterflies of southern Newfoundland with descriptions of new subspecies (Lepid. Rhopal.). *Can. Ent.* 67: 82–88.
- 1964. A synonymic list of the Nearctic Lepidoptera. *Mem. Lepid. Soc.* (1): v + 145 pp.
- Doubleday, E.** [1846–1849]. In Doubleday, E. & Westwood, J. O., *The genera of diurnal Lepidoptera*, 1: 250 pp., 33 pls. London.
- Druce, H.** 1874a. Descriptions of fifteen new species of diurnal Lepidoptera, chiefly from South America. *Trans. ent. Soc. Lond.* 1874: 155–160.
- 1874b. Descriptions of three new butterflies from Costa Rica. *Entomologist's mon. Mag.* 11: 36–37.
- 1876. List of the butterflies of Peru, with descriptions of new species. With some notes by Edward Bartlett. *Proc. zool. Soc. Lond.* 1876: 205–250, 2 pls.
- Drury, D.** [1770/1773]. Illustrations of natural history, xxviii + 130 pp., 50 pls; index, errata and addenda (including names for species depicted in vol. 1) published in 1773, with vol. 2 of this work. London.
- Dyar, H. G.** 1913a. Descriptions of new Lepidoptera, chiefly from Mexico. *Proc. U.S. natn. Mus.* 44: 279–324.
- 1913b. Results of the Yale Peruvian Expedition of 1911. Lepidoptera. *Proc. U.S. natn. Mus.* 45: 627–649.
- Edwards, W. H.** 1861. Descriptions of certain species of diurnal Lepidoptera, found within the limits of the United States and of British America. *Proc. Acad. nat. Sci. Philad.* 1861: 160–164.
- 1863. Descriptions of certain species of diurnal Lepidoptera found within the limits of the United States and British America. No. 2. *Proc. ent. Soc. Philad.* 2: 78–82.
- 1864. Descriptions of certain species of diurnal Lepidoptera found within the limits of the United States and British North America, no. 3. *Proc. ent. Soc. Philad.* 2: 501–507.
- 1865. Descriptions of certain species of diurnal Lepidoptera found within the limits of the United States and British America, no. 4. *Proc. ent. Soc. Philad.* 4: 201–204.
- [1869]. Notes on a remarkable variety of *Papilio turnus*, and descriptions of two species of diurnal Lepidoptera. *Trans. Am. ent. Soc.* 2: 207–210.
- 1869. Descriptions of new species of diurnal Lepidoptera found within the United States. *Trans. Am. ent. Soc.* 2: 369–376.
- 1871a. Descriptions of new species of diurnal Lepidoptera found within the United States. *Trans. Am. ent. Soc.* 3: 205–216.
- 1871b. Descriptions of new species of North American butterflies. *Trans. Am. ent. Soc.* 3: 266–277.
- 1871c. Descriptions of new North American diurnal Lepidoptera. *Trans. Am. ent. Soc.* 3: 189–196.
- 1878. *The butterflies of North America* 2 (7): *Phyciodes* 2, [4], 1 pl. Boston.
- Erschoff, N.** 1874. Description of new species of exotic Lepidoptera. *Trud̄y. russk. ent. Obshch.* 8: 140–149, 1 pl.
- Eschscholtz, J. F.** 1821. Beschreibung neuer ausländischer Schmetterling. In Kotzebue, O. von, *Entdeckungs-Reise in die Süd-See und nach der Berings-Strasse zur Erforschung einer nord östlichen Durchfahrt*, 3 Appendix (5): 201–219, 11 pls. Weimar.
- Fabricius, J. C.** 1775. *Systema entomologiae*, [xxxii] + 832 pp. Flensburgi et Lipsiae.
- 1781. *Species insectorum*, 2: 517 pp. Hamburgi & Kilonii.
- 1787. *Mantissa insectorum*, 2: 382 pp. Hafniae.
- 1807. *Systema Glossatorum*. Die neueste Gattungs-Eintheilung der Schmetterlinge aus den Linnéischen Gattungen *Papilio* und *Sphinx*. *Magazin Insektenk.* (Illiger) 6: 277–295.
- Fassl, A. H.** 1912. Neue Nymphaliden aus Südamerika. *Ent. Rdsch.* 29: 121–123.
- 1922. Neue Schmetterlingsformen aus Brasilien [part]. *Ent. Z., Frankf. a.M.* 36: 38–39.
- Felder, C. & Felder, R.** 1861. Lepidoptera nova Columbiae [part]. *Wien. ent. Monatschr.* 5: 97–111.
- 1862a. Specimen faunae lepidopterologicae riparum fluminis Negro superioris in Brasilia septentrionali [part]. *Wien. ent. Monatschr.* 6: 109–126.

- 1862b. *Lepidoptera nova Columbiae. Series tertia. Wien. ent. Monatschr.* 6: 409–427.
- 1865–1867. *Reise der Österreichischen fregatte Novara. Zoologischer Theil, Zweiter Band, Zweite Abtheilung, Lepidoptera, Rhopalocera.* vi + 535 pp., 74 pls. Wien.
- Felder, R.** 1869. Diagnosen neuer von dem K. K. Oberlieutenant H. v. Hedemann in Mexico in den Jahren 1865–1867 gesammelter Lepidopteren. Erste Folge. *Verh. zool.-bot. Ges. Wien* 19: 465–480.
- Fender, K. M.** 1930. A new butterfly aberration (Lepid.: Nymphalidae). *Ent. News* 41: 182.
- Ferreira d'Almeida, R.** 1922. *Mélanges Lépidoptérologiques. Études sur les Lépidoptères du Brésil*, viii + 226 pp. Berlin.
- Forbes, W. T. M.** 1945. The genus *Phyciodes* (Lepidoptera, Nymphalinae). *Entomologica am.* 24: 139–207.
- 1946. The genus *Gnathotriche* (Lepidoptera, Nymphalidae), pp. 195–198 (no. 18). In *Livro de homenagem a R. Ferreira d'Almeida*. Sao Paulo.
- Gabriel, A. G.** 1927. *Catalogue of the type specimens of Lepidoptera Rhopalocera in the British Museum. Part III. Nymphalidae.* 128 pp. London.
- Geyer, C.** 1832. *Zuträge zur Sammlung exotischer Schmetterlinge.* 48 pp., 33 pls. Augsburg.
- Giacomelli, E.** 1911. Lepidópteros riojanos nuevos ó poco conocidos. *An. Soc. cient. argent.* 72: 19–26.
- 1928. Nuevos lepidópteros de Cosquín. *Bol. Inst. Clin. quirurg.* 4: 677–690.
- Godart, J. B.** 1819, 1824. In Latreille, P. A. & Godart, J. B., *Encyclopédie méthodique. Histoire Naturelle [Zoologie]* 9. Entomologie. [iv] + 828 pp. Paris.
- Godman, F. du C. & Salvin, O.** 1878a. Descriptions of nineteen new species of diurnal Lepidoptera from Central America. *Proc. zool. Soc. Lond.* 1878: 264–271.
- 1878b. Descriptions of new species of Rhopalocera from Central and South America. *Ann. Mag. nat. Hist.* (5) 2: 257–266.
- 1879. Descriptions of new species of Rhopalocera from Central and South America. *Proc. zool. Soc. Lond.* 1879: 150–155, 1 pl.
- 1880. A list of the diurnal Lepidoptera collected in the Sierra Nevada of Santa Marta, Colombia, and the vicinity. *Trans. ent. Soc. Lond.* 1880: 119–132, 2 pls.
- 1882. *Biologia Centrali-Americana. Insecta, Lepidoptera-Rhopalocera* 1, 487 pp., 48 pls [1879–1886].
- 1889. Descriptions of new species of Rhopalocera from Mexico and Central America. *Ann. Mag. nat. Hist.* (6) 3: 351–358.
- 1897. Descriptions of new species of Central and South American Rhopalocera. *Trans. ent. Soc. Lond.* 1897: 241–248.
- 1901. *Biologia Centrali-Americana. Insecta, Lepidoptera-Rhopalocera* 2, 782 pp., pls 84–112 [1887–1901].
- Grimshaw, P. H.** 1898. On some type specimens of Lepidoptera and Coleoptera in the Edinburgh Museum of Science and Art. *Trans. R. Soc. Edinb.* 39: 1–11, 1 pl.
- Gunder, J. D.** 1927. New transition forms or 'abs' and their classification (Lepid., Rhopalocera). *Ent. News* 38: 129–138, 1 pl.
- 1928. Additional transition forms (Lepid., Rhopalocera). *Can. Ent.* 60: 162–168, 2 pls.
- 1930. Butterflies of Los Angeles County, California. *Bull. Sth. Calif. Acad. Sci.* 29: 39–95, 'frontispiece', map. [Also appeared as 'unauthorised separate', 6.viii.1930; see Editor's note, p. 95.]
- 1932. New Rhopalocera (Lepidoptera). *Can. Ent.* 64: 276–284.
- Guppy, R.** 1974. *Phyciodes mylitta* (Nymphalidae) on Vancouver Island. *J. Lepid. Soc.* 28: 223.
- Hall, A.** 1977. New butterflies of the family Nymphalidae. [part]. *Entomologist* 50: 161–163.
- 1921. Descriptions of three new butterflies from Colombia. *Entomologist* 54: 278–279.
- 1928a. Some new forms of Nymphalinae (Rhopalocera) from tropical America. *Entomologist* 61: 11–13.
- 1928b–1930. A revision of the genus *Phyciodes* Hubn. (Lepidoptera Nymphalidae). *Bull. Hill. Mus., Witley* (as supplements to vols 2–4), pp. 1–44, 2 pls (1928), 45–170 (1929), 171–204 + additions [205] (1930).
- 1935. New forms of Nymphalinae and Ithomiinae. *Entomologist* 68: 221–227, 1 pl.
- Hall, G. C.** 1924. Notes on *Polygonia j-album*, *Cercyonis alope*, *Phyciodes tharos*, *Heodes epixanthe* and *Euphydryas gilletti*. *Jl. N. Y. ent. Soc.* 32: 109–111, 1 pl.
- Harris, W. T.** 1862. *A treatise on some of the insects injurious to vegetation* (3rd edn), xi + 640 pp., 8 pls. Boston.
- Hayward, K. J.** 1931. Lepidópteros Argentinos. Família Nymphalidae. *Revta Soc. ent. argent.* 4: 1–199, 21 pls.
- 1933. Notas adicionales acerca de los Nymphalidae Argentinos. *Revta Soc. ent. argent.* 5: 213–218.
- 1935. *Phyciodes liriopoe* (Cramer) (Lep. Nymph.) sinonimia y distribución, especialmente de formas Argentinas. *Revta Soc. ent. argent.* 7: 219–223.

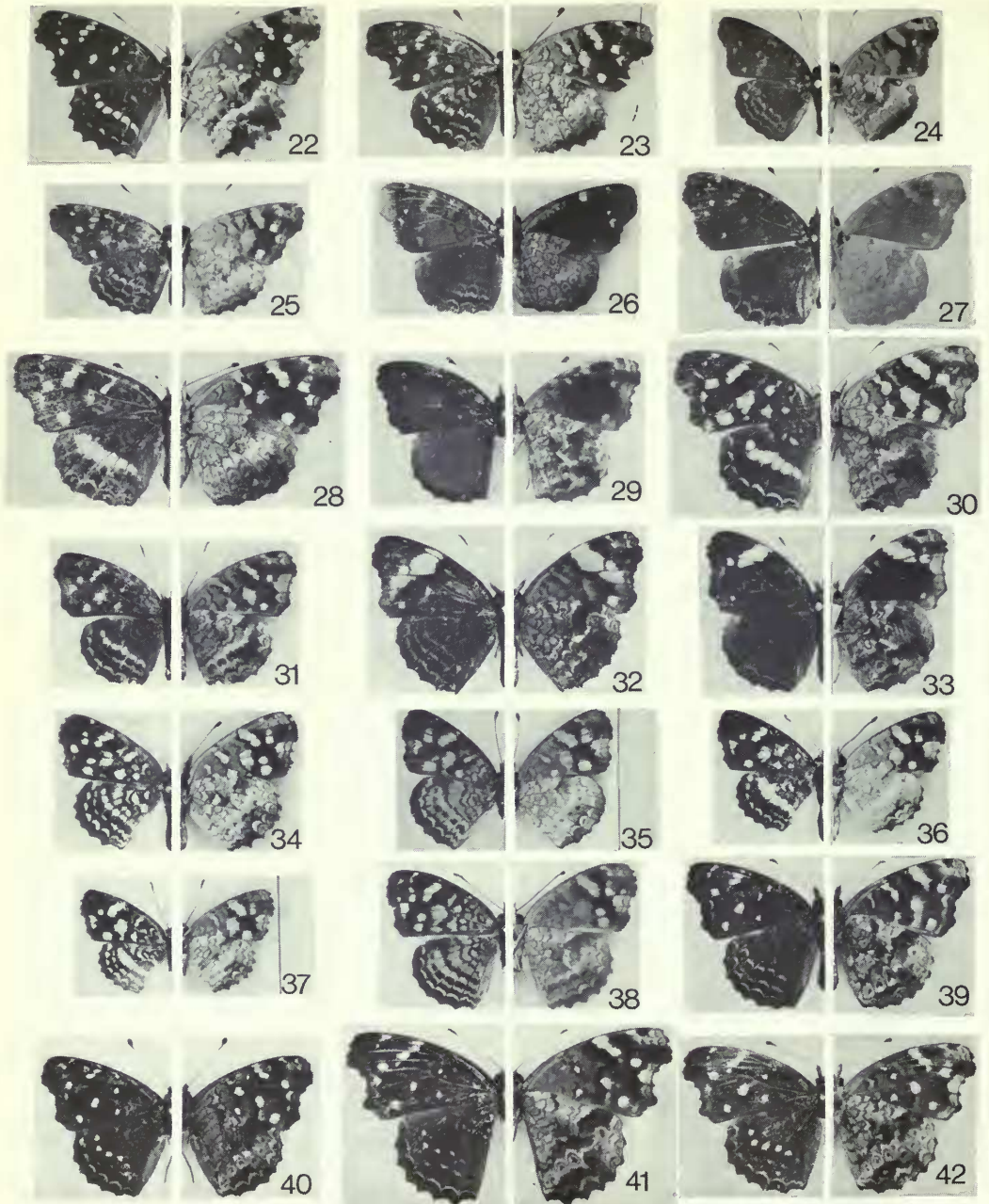
- 1949. *Ninfalidos argentinos: modificaciones en su nomenclatura y en la lista de especies* (Lep. Nymphalidae). *Acta zool. lilloana* 7: 5–26.
- 1952. Más notas sobre Ninfalidos Argentinos. *Acta zool. lilloana* 10: 285–290.
- 1964a. Una nueva *Phyciodes* de Peru (Lep. Rhop. Nymphalidae). *Acta zool. lilloana* 20: 63–65.
- 1964b. Nymphalidae. *Genera et species animalium argentinorum*, 3: [ix] + 472 pp., 20 pls.
- 1967. Una nueva *Phyciodes* del Ecuador Oriente (Lep. Rhop. Nymphalidae). *Acta zool. lilloana* 21: 13–15.
- Hemming, F.** 1937. *Hübner* 1: frontispiece, xxxiv + 605 pp.; 2: xii + 274 pp. London.
- 1964. *Annotationes Lepidopterologicae* 4: 115–154. London.
- Hering, M. & Hopp, W.** 1925. Eine Sammelausbeute des Herrn Werner Hopp aus dem Chocó Kolumbiens. *Dt. ent. Z. Iris* 39: 181–207.
- Hewitson, W. C.** [1852]. *Illustrations of new species of exotic butterflies, selected chiefly from the collections of W. Wilson Saunders and William C. Hewitson* 1: v + [120 pp.] + index [iv] + [60] pls. London.
- [1857]. *Illustrations of . . . exotic butterflies . . .* 2: iv + [120 pp.] + index [iv] + [60] pls. London.
- [1864; 1866]. *Illustrations of . . . exotic butterflies . . .* 3: iv + [120 pp.] + index [iv] + [60] pls. London.
- [1868; 1870]. *Illustrations of . . . exotic butterflies . . .* 4: iii + [114 pp.] + index [iv] + [60] pls. London.
- 1869a. *Equatorial Lepidoptera collected by Mr Buckley* (1): ii + 16 pp.; (2): pp. 17–32. London.
- 1869b. Descriptions of six new species of diurnal Lepidoptera from Nicaragua. *Trans. ent. Soc. Lond.* 1869: 33–35.
- 1869c. Descriptions of new species of Lepidoptera Rhopalocera, from Old Calabar and Ecuador. *Entomologist's mon. Mag.* 6: 97–99.
- [1872]. *Illustrations of . . . exotic butterflies . . .* 5: iii + [116 pp.] + index [v] + preface [ii] + systematic index for whole work [v]. London.
- 1874a. *Descriptions of new species of butterflies collected by Mr. Buckley in Bolivia*. 22 pp. London.
- 1874b. Descriptions of new species of butterflies. *Entomologist's mon. Mag.* 11: 56.
- Higgins, L. G.** 1930. Some erebiid butterflies from Styria. *Proc. ent. Soc. Lond.* 5: 21.
- 1941. An illustrated catalogue of the palaearctic *Melitaea* (Lep. Rhopalocera). *Trans. R. ent. Soc. Lond.* 91: 175–365, 16 pls.
- 1950. A descriptive catalogue of the palaeartic *Euphydryas* (Lepidoptera: Rhopalocera). *Trans. R. ent. Soc. Lond.* 101: 435–489.
- 1955. A descriptive catalogue of the genus *Mellicta* Billberg (Lepidoptera: Nymphalidae) and its species, with supplementary notes on the genera *Melitaea* and *Euphydryas*. *Trans. R. ent. Soc. Lond.* 106: 1–132, 2 pls.
- [1959]. Four new Melitaeine genera (Nymphalidae). *Lepid. News* 12 (1958): 161–164.
- 1960. A revision of the Melitaeine genus *Chlosyne* and allied species (Lepidoptera: Nymphalinae). *Trans. R. ent. Soc. Lond.* 112: 381–467.
- 1978. A revision of the genus *Euphydryas* Scudder (Lepidoptera: Nymphalidae). *Entomologist's Gaz.* 29: 109–115.
- Holland, W. J.** 1947. *The butterfly book* [new and thoroughly revised edn], xii + 424 pp., 77 pls. Garden City, New York.
- Hopffer, C.** 1874. Neue Lepidopteren von Peru und Bolivia. *Stettin. ent. Ztg.* 35: 329–371.
- Howe, W. H.** 1975. *The butterflies of North America*, xiii + 633 pp., 97 pls. Garden City, New York.
- Hübner, J.** [1807, 1808]. *Sammlung exotischer Schmetterlinge* 1: title page, [36] + [iv] pp., 213 col. pls. [published [1806]–[1832]]. Augsburg.
- [1816, 1819]. *Verzeichniss bekannter Schmettlinge*. 431 + 72 pp. [published 1816–[1826]]. Augsburg.
- 1823. *Zuträge zur Sammlung exotischer Schmettlinge* 2: [3] + 4–6 + [7] + 8–32 + [33]–[40] pp., col. pls [36]–[69] (figs 201–400) [published [1819]–1823]. Augsburg.
- [—] [1825]. *Catalogue des Lépidoptères qui composent la collection de feu Mr Franck*, [iv] + 108 pp. Strasbourg.
- [1826]. *Sammlung exotischer Schmetterlinge* 2: Title page + [iv] pp., 225 pls. [publ. [1819]–[1832]]. Augsburg.
- Kirby, W.** 1837. The Insects. In Richardson, J., (ed.), *Fauna Boreali-Americana or the Zoology of the northern parts of British America*, xxxvii + 325 pp., 8 pls, errata [i]. London.
- Kirby, W. F.** 1871. *A synonymic catalogue of diurnal Lepidoptera*, viii + 690 pp. London.
- 1900. Additional notes. In Wytzman, P., *Sammlung exotischer Schmetterlinge* (by Jacob Hübner), new English Fac-simile edition, [i] + 172 pp. Brussels.
- Klots, A. B.** 1951. *A field guide to the butterflies of North America, east of the Great Plains*, xvi + 349 pp., 40 pls. Boston.
- Köhler, P.** 1945. Melanismos naturales en Lepidopteros Argentinos. *Revta Soc. ent. argent.* 12: 253–256, 1 pl.

- Kollar, V.** [1849]. Beiträge zur Insecten-Fauna von Neu-Granada und Venezuela. *Denkschr. Akad. Wiss. Wien* 1: 351–364, 4 pls.
- Linnaeus, C.** 1758. *Systema naturae* (10th edn), [iv] + 824 pp. Holmiae.
— 1767. *Systema naturae* 1 (2), 12th edn, pp. 533–1328 + [36]. Holmiae.
- Merian, M. S.** 1705. *Metamorphosis insectorum Surinamensium*, [iv] + 60 pp., 60 pls. Amstelodami.
- Moulton, J. C.** 1909. The collections of William John Burchell, D. C. L., in the Hope Department, Oxford University Museum. IV. On the Lepidoptera Rhopalocera collected by W. J. Burchell in Brazil, 1825–1830 [part]. *Ann. Mag. nat. Hist.* (8) 3: 98–111.
- Oberthür, C.** 1914. Les Lépidoptères de la Californie, par le docteur Boisduval. *Etudes de Lépidoptérologie Comparée* 9: 73–89, 7 pls. Rennes.
- Oliver, C. G.** 1978a. A male-lethal genetic factor in *Phyciodes tharos* (Nymphalidae). *J. Lepid. Soc.* 32: 231–233.
— 1978b. Experimental hybridization between the nymphalid butterflies *Phyciodes tharos* and *P. campestris montana*. *Evolution* 32: 594–601.
— 1979. Experimental hybridization between *Phyciodes tharos* and *P. batesii* (Nymphalidae). *J. Lepid. Soc.* 33: 6–20.
- Packard, A. S.** 1868 (1889). *Guide to the study of insects* (9th edn only consulted; 1st edn dated 1868–9), xii + 715 pp., 15 pls.
- Poey, P. H.** 1832. *Centurie de lépidoptères de l'île de Cuba*. Paris.
- Reakirt, T.** 1865. Descriptions of some new species of *Eresia*. *Proc. ent. Soc. Philad.* 5: 224–227.
— 1866a. Coloradian butterflies. *Proc. ent. Soc. Philad.* 6: 122–151.
— 1866b. Descriptions of some new species of diurnal Lepidoptera. *Proc. ent. Soc. Philad.* 6: 331–342.
- Reiff, W.** 1913. Some new forms of Lepidoptera from Massachusetts. *Ent. News* 24: 305–310, 1 pl.
- Riley, N. D.** 1975. *A field guide to the butterflies of the West Indies*, 224 pp. + 24 pls, endpapers. London.
- Röber, J.** 1913–1914. Genus *Phyciodes* Hbn. In Seitz, A., (ed.), *Gross-Schmetterl. Erde* (2) 5: pp. 434–448 (1913), 449–450 (1914); 5 pls.
— 1924. [Additional notes]. In Seitz, A., (ed.), *Gross-Schmetterl. Erde* (2) 5: p. 1030, pl. 192.
— 1927. Neue exotischer Falter. *Int. ent. Z.* 21: 97–100.
- Robson, G. C. & Richards, O. W.** 1936. *The variation of animals in nature*, xvi + 425 pp., 2 pls. London.
- Rosenberg, W. F. H. & Talbot, G.** 1914. New South American butterflies. *Trans. ent. Soc. Lond.* 1913: 671–682.
- Salvin, O.** 1869. Descriptions of new species of butterflies from tropical America. [part]. *Ann. Mag. nat. Hist.* (4) 4: 163–181.
— 1871. Descriptions of new species of butterflies from tropical America. [part]. *Ann. Mag. nat. Hist.* (4) 7: 412–416.
- Salvin, O. & Godman, F. du C.** 1868. On some new species of diurnal Lepidoptera from South America. *Ann. Mag. nat. Hist.* (4) 2: 141–152.
- Schatz, E.** (1885)–1892. Die Familien und Gattungen der Tagfalter. In Staudinger, O. & Schatz, E., *Exotische Schmetterlinge*, 2: [vi] + II + 284 pp., 50 pls. Fürth, Bavaria.
- Schaus, W.** 1902. Descriptions of new American butterflies. *Proc. U.S. natn. Mus.* 24: 383–460.
— 1913. New species of Rhopalocera from Costa Rica. *Proc. zool. Soc. Lond.* 1913: 339–367, 5 pls.
- Scott, J. A.** 1974. Early stages and biology of *Phyciodes orseis* (Nymphalidae). *J. Res. Lepid.* 12: 236–242.
- Scudder, S.** 1875. Synonymic list of the butterflies of North America, north of Mexico. *Bull. Buff. Soc. nat. Sci.* 2: 233–269.
- Shepard, J. H.** 1977. Immigration of *Phyciodes mylitta* to Vancouver Island (Lepidoptera: Nymphalidae). *Pan-Pacif. Ent.* 53: 167–168.
- Skinner, H.** 1897. Notes on Rhopalocera, with descriptions of new species and varieties. *Can. Ent.* 29: 154–156.
— 1911. New species or sub-species of North American butterflies (Lepid.). *Ent. News* 22: 412–413.
— 1917. New species of Lepidoptera. *Ent. News* 28: 328–329.
- Staudinger, O.** 1885 (1884–1888). *Exotische Tagfalter*, Band 1: Beschreibungen, Band 2: Abbildungen. [iv] + 333 pp., 100 pls. In Staudinger, O. & Schatz, E., *Exotische Schmetterlinge*. Bayern.
— 1894. Hochandine Lepidoptera. *Dt. ent. Z. Iris* 7: 43–100, 2 pls.
- Strand, E.** 1912a. Exotisch-Lepidopterologisches. *Arch. Naturgesch.* 78(A) 9: 143–158.
— 1912b. Über einige exotische Lepidoptera aus der Sammlung des Herrn W. Niepelt in Zirlau. *Arch. Naturgesch.* 78(A) 9: 178–186.
— 1916. *Lepidoptera Niepeltiana* 2: 26 pp., 5 pls. Zirlau.
— 1920. Bemerkungen über einige exotische Grossschmetterlinge [part]. *Int. ent. Z.* 14: 145–150.

- Tilden, J. W.** [1970]. Concerning the names and status of certain North American members of the genus *Phyciodes*. *J. Res. Lepid.* **8** (1969): 94-98.
- 1975. An analysis of the W. G. Wright butterfly and skipper plesiotypes in the collection of the California Academy of Sciences. *Occ. pap. Calif. Acad. Sci.* (118): 1-44.
- Vane-Wright, R. I.** 1975. The butterflies named by J. F. Gmelin (Lepidoptera: Rhopalocera). *Bull. Br. Mus. nat. Hist.* (Ent.) **32**: 17-64, 6 pls.
- 1976. A unified classification of mimetic resemblances. *Biol. J. Linn. Soc.* **8**: 25-56.
- van Someren, V. G. L. & Jackson, T. H. E.** 1959. Some comments on protective resemblance amongst African Lepidoptera (Rhopalocera). *J. Lepid. Soc.* **13**: 121-150.
- Vawter, A. T. & Brussard, P. F.** 1975. Genetic stability of populations of *Phyciodes tharos* (Nymphalidae: Melitaeinae). *J. Lepid. Soc.* **29**: 15-23.
- Weeks, A. G.** 1901. Description of nine new Bolivian butterflies. *Trans. am. ent. Soc.* **27**: 353-360.
- 1905. *Illustrations of diurnal Lepidoptera, with descriptions*, [1]: xii + 117 pp., 45 pls. Boston.
- 1906. New species of butterflies. *Ent. News* **17**: 195-204.
- 1911. *Illustrations of diurnal Lepidoptera, with descriptions*, 2: xvi + 37 pp., 21 pls. Boston.
- Weymer, G.** 1890. In Weymer, G. & Maassen, P., *Lepidoptera gesammelt auf einer Reise durch Colombia, Ecuador, Peru, Brasilien, Argentinien und Bolivien in den Jahren 1868-1877 von Alphons Stübel*, xi + 182 pp., 9 pls. Berlin.
- 1907. Exotische Lepidopteren. *Dt. ent. Z. Iris* **20**: 1-51, 2 pls.
- Wright, W. G.** 1906. *The butterflies of the west coast of the United States* (2nd edn; most of 1st edn, published in 1905, destroyed by fire), 257 + vii pp., frontispiece + 32 pls. San Bernardino.
- Young, A. M.** 1973. Notes on the biology of *Phyciodes (Eresia) eutropia* (Lepidoptera: Nymphalidae) in a Costa Rican mountain forest. *Jl N. Y. ent. Soc.* **81**: 87-100.
- Zikan, J. F.** 1937. Neue Nymphaliden-Arten und -Formen aus Brasilien. [part]. *Ent. Rdsch.* **54**: 385-387.
- Zimsen, E.** 1964. *The type material of I. C. Fabricius*, 656 pp. Copenhagen.



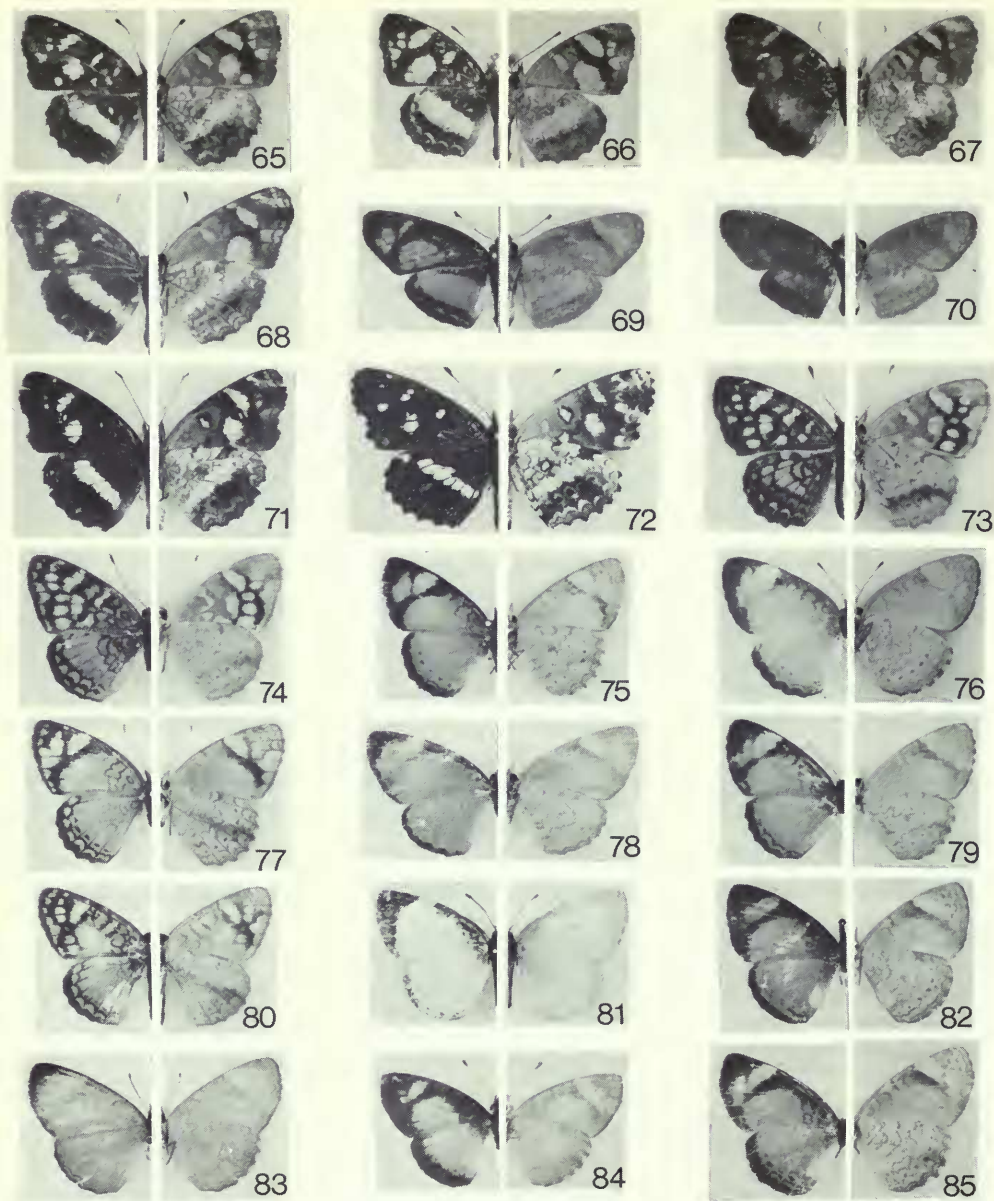
Figs 1–21 1–11, *Phyciodes* species. (1) *P. tharos* (Drury), Scranton, Pennsylvania; (2) *P. batesii* (Reakirt), Scranton, Pennsylvania; (3) *P. montanus* (Behr), Reno, Nevada; (4) *P. campestris campestris* (Behr), Sherman Camp, Oregon; (5) *P. campestris camillus* Edwards, Divide, Colorado; (6) *P. mylitta mylitta* (Edwards), Crater Lake, Oregon; (7) *P. mylitta thebais* (Godman & Salvin), Calderas, Guatemala; (8) *P. pallidus* (Edwards), Warm Springs, Jefferson County; (9) *P. pictus pictus* (Edwards), Arizona; (10) *P. phaon* (Edwards), Louisiana; (11) *P. vesta vesta* (Edwards), Bexar County, Texas. 12, 13, *Phystis* species. (12) *P. simois simois* (Hewitson), San Antonio da Barra, Bahia, Brazil; (13) *P. simois variegata* (Röber), Santiago de Chaquitos, Bolivia. 14–21, *Anthanassa* species. (14) *A. drusilla drusilla* (Felder & Felder), Merida, Venezuela; (15) *A. drusilla alceta* (Hewitson), Chanchamayo, Peru; (16) *A. drusilla verena* (Hewitson), Cochabamba, Bolivia; (17) *A. ptolyca ptolyca* (Bates), San Geronimo, Guatemala; (18) *A. ardys ardys* (Hewitson), Cordoba, Mexico; (19) *A. ardys subota* (Godman & Salvin), Vera Paz, Guatemala; (20) *A. dracaena* (Felder & Felder), 'New Granada' [Colombia]; (21) *A. phleaias* (Godman & Salvin), Honduras.



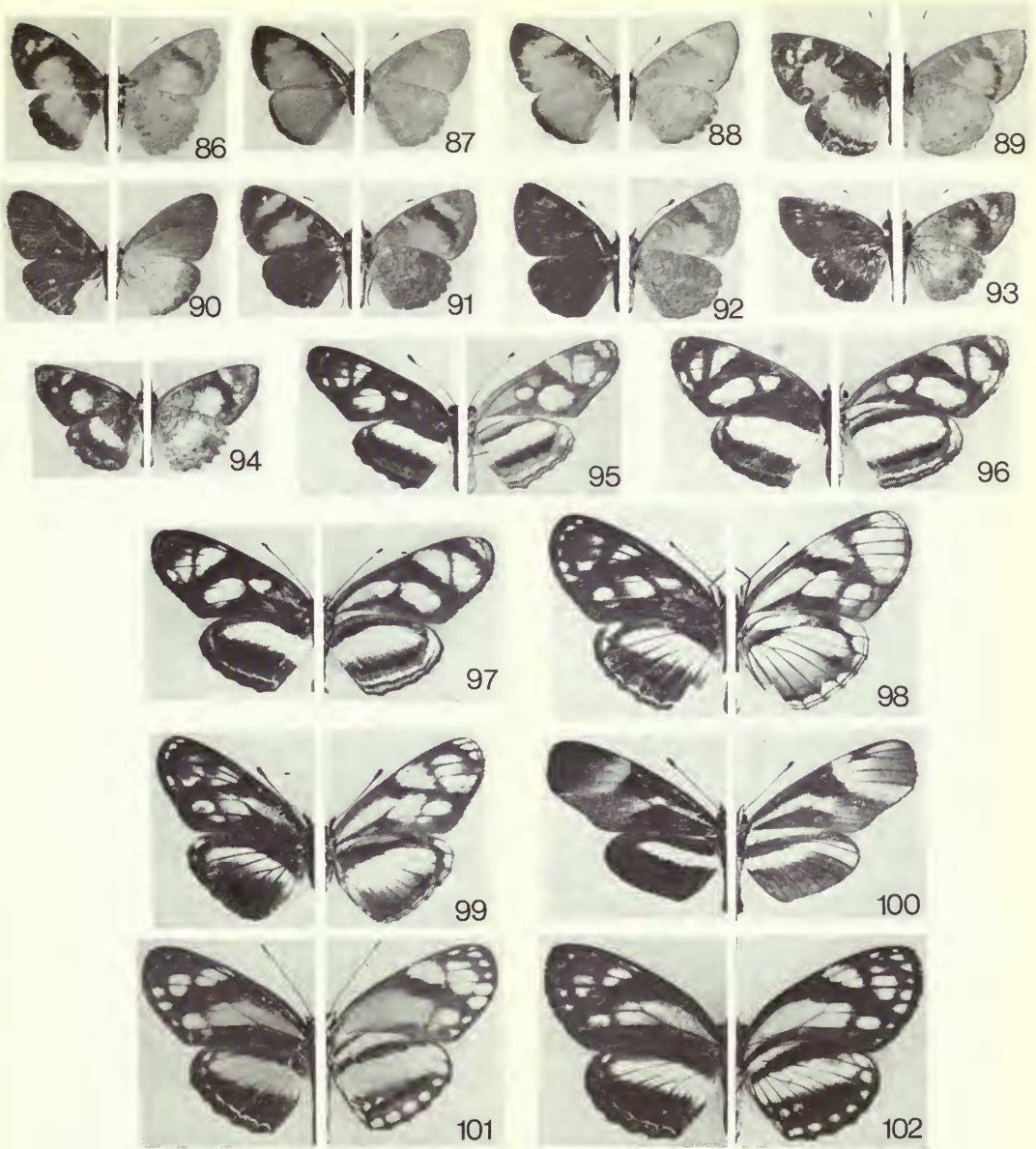
Figs 22–42 *Anthanassa* species. (22) *A. texana texana* (Edwards), Sonora, Mexico; (23) *A. alexon alexon* (Godman & Salvin), Guerrero, Mexico; (24) *A. acesas* (Hewitson), Venezuela; (25) *A. nebulosa* (Godman & Salvin), Manaure, N. Colombia; (26) *A. argentea* (Godman & Salvin), Atoyac, Vera Cruz, Mexico; (27) *A. atronia* (Bates) ♂, Zapoto, Guatemala; (28) *A. atronia* (Bates) ♀, Atoyac, Vera Cruz, Mexico; (29) *A. otones otones* (Hewitson) ♂, Duenas, Guatemala; (30) *A. otones otones* (Hewitson) ♀, Christobal, Vera Paz, Guatemala; (31) *A. annulata* sp. n., Rio Dagua, Colombia; (32) *A. crithona* (Salvin), Chiriqui, Panama; (33) *A. fulviplaga* (Butler), Cache, Costa Rica; (34) *A. hermas* (Hewitson), Sapucay, Paraguay; (35) *A. frisia* (Poey), Holgunin, Cuba; (36) *A. tulcis* (Bates), Yucatan, Mexico; (37) *A. dubia* (Hall), San Esteban, Venezuela; (38) *A. taeniata* (Röber), Vina, N. W. Peru; (39) *A. sosis* (Godman & Salvin), Irazu, Costa Rica; (40) *A. drymaea* (Godman & Salvin), Calderas, Guatemala; (41) *A. sitalces* (Godman & Salvin), Chilasco, Guatemala; (42) *A. cortes* (Hall), Omilteme, Guerrero, Mexico.



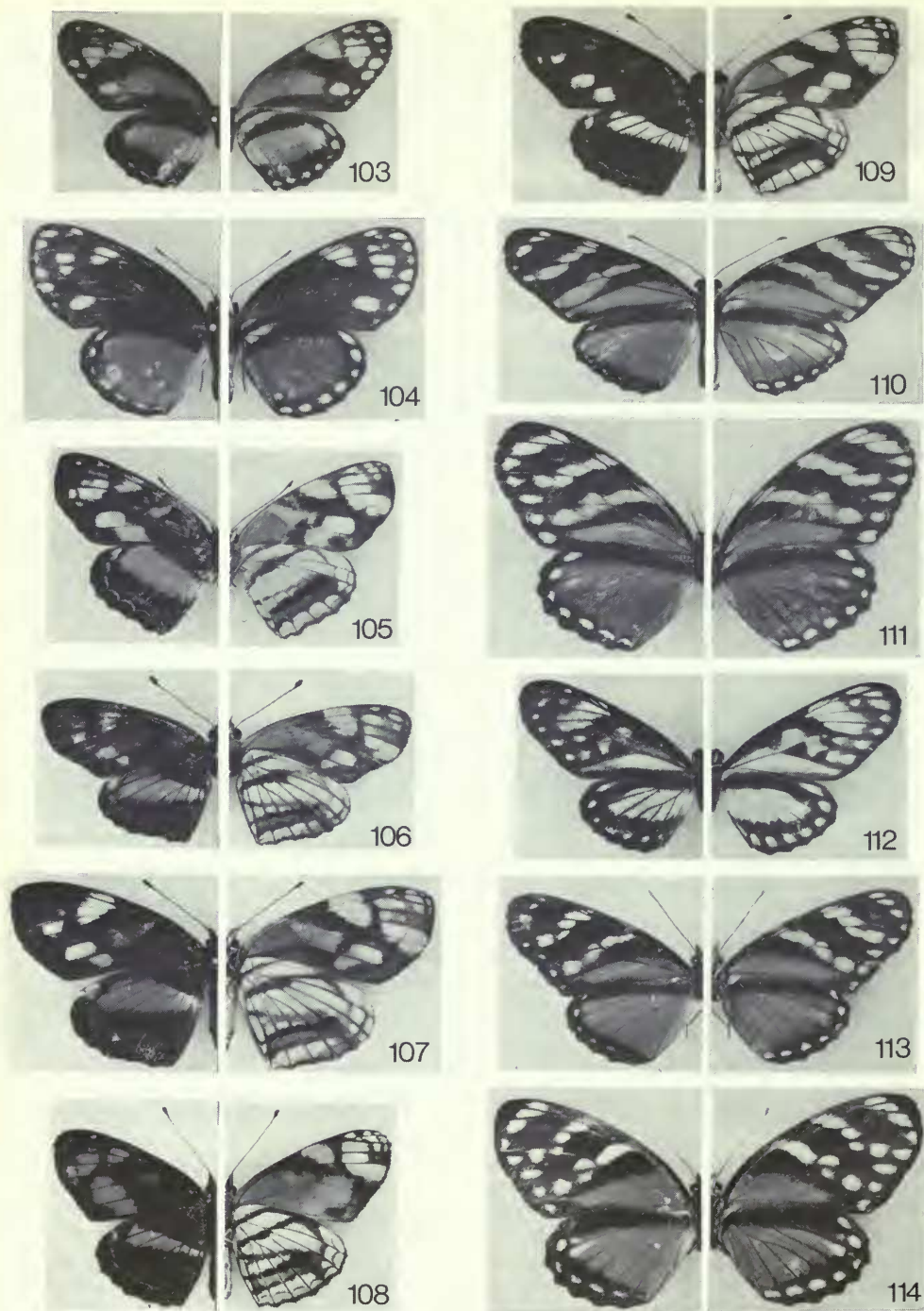
Figs 43–64 43–46, *Dagon* species. (43) *D. pusillus* (Salvin), Rio Colorado, Peru; (44) *D. catula* (Hopffer), Charaplaya, Bolivia; (45) *D. morenus* (Röber), Cuzco, Peru; (46) *D. fontus* (Hall), Guyana. 47–62, *Telenassa* species. (47) *T. teletusa* (Godart), Novo Friburgo, Brazil; (48) *T. berenice* (Felder & Felder), Chanchamayo, Peru; (49) *T. burchelli* (Moulton), Chanchamayo, Peru; (50) *T. signata* (Hall), La Rioja, Argentina; (51) *T. abas* (Hewitson), Siato, W. Colombia; (52) *T. jana* (Felder & Felder), Moyobamba, Peru; (53) *T. elaphina* (Röber), Cochabamba, Bolivia; (54) *T. nana* (Druce), Rio Colorado, Peru; (55) *T. nussia* (Druce), Chachapoyas, Peru; (56) *T. notus* (Hall), Pozuzo, Peru; (57) *T. gaujoni* (Dognin), Ecuador; (58) *T. trimaculata* (Hewitson), Ecuador; (59) *T. flavocincta* (Dognin), Chachapoyas, Peru; (60) *T. catenaria* (Godman & Salvin), W. Colombia; (61) *T. delphia* (Felder & Felder), Magdalena Valley, Colombia; (62) *T. sepulta* (Hall), Chachapoyas, Peru. 63, 64, *Ortilia* species. (63) *O. liriopoe* (Cramer), Obydos, Amazon; (64) *O. gentina* sp. n., Tucumán, Argentina.



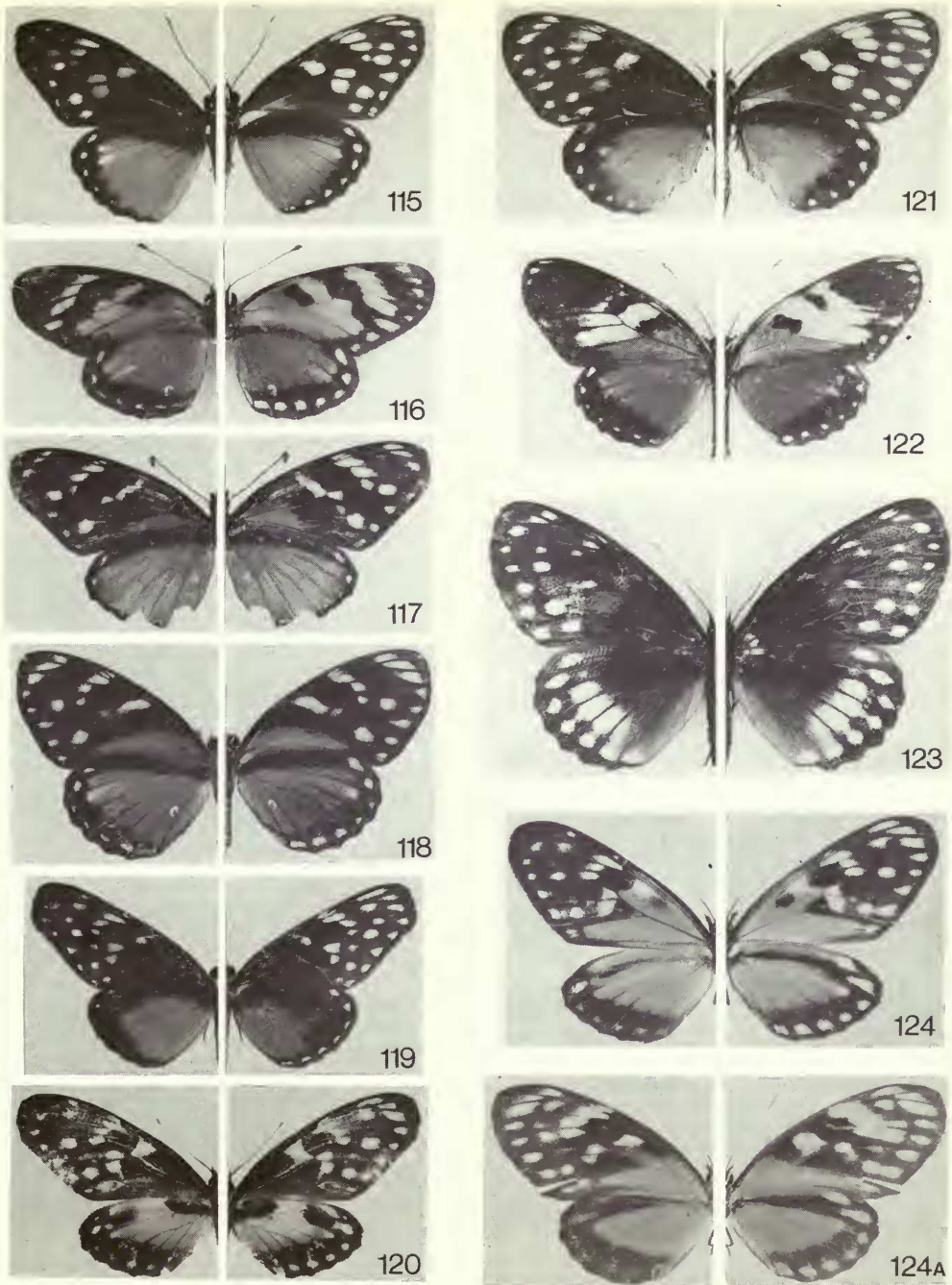
Figs 65–85 65–72, *Ortilia* species. (65) *O. orthia* (Hewitson), Sapucay, Paraguay; (66) *O. sejona* (Schaus), Goias, Brazil; (67) *O. velica* (Hewitson), São Paulo, Brazil; (68) *O. zamora* (Hall), Espiritu Santo, Brazil; (69) *O. dicoma* (Hewitson), Sapucay, Paraguay; (70) *O. polinella* (Hall), San Fidelis, Rio de Janeiro; (71) *O. orticas* (Schaus), Rio de Janeiro, Brazil; (72) *O. ithra* (Kirby), Rio Iguassu, Brazil. 73, 74, *Tisona* species. (73) *T. saladillensis saladillensis* (Giacomelli), Salta, Argentina; (74) *T. saladillensis clarior* subsp. n., Bolivia. 75–85, *Tegosa* species. (75) *T. claudina* (Escholtz), Iguassu, Parana, Brazil; (76) *T. similis* nom. n., Siapure, Venezuela; (77) *T. orobia* (Hewitson), Sapucay, Paraguay; (78) *T. fragilis* (Bates), Altamira, Brazil; (79) *T. infrequens* sp. n., Petropolis, Brazil; (80) *T. ursula* (Staudinger), Sierra de Aconquija, N. Argentina; (81) *T. flavida* (Hewitson), N. Peru; (82) *T. pastazena* (Bates), Pozzuzo, E. Peru; (83) *T. guatemalena* (Bates), Oaxaca, Mexico; (84) *T. anieta anieta* (Hewitson) ♂, El Valle, Panama; (85) same ♀, San Luis Potosi, Mexico.



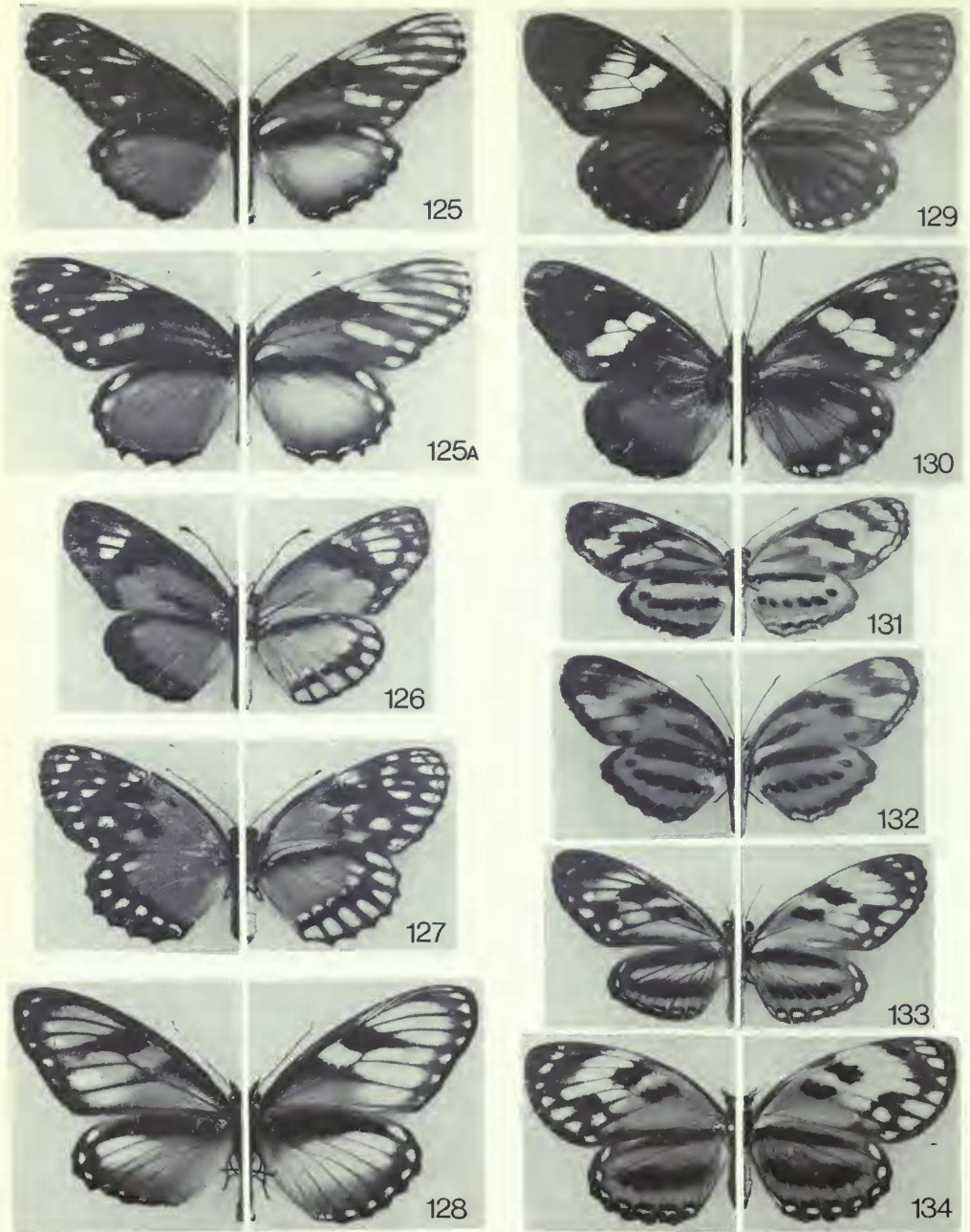
Figs 86–102 86–94, *Tegosia* species. (86) *T. anieta cluvia* (Godman & Salvin), La Paz, Bolivia; (87) *T. anieta luka* subsp. n., Pacho, Colombia; (88) *T. anieta serpia* subsp. n., Tarapoto, Peru; (89) *T. nazaria* (Felder & Felder), Bogota, Colombia; (90) *T. tissoides* (Hall), Salidero, N. W. Ecuador; (91) *T. etia* (Hewitson), Cochabamba, Bolivia; (92) same, Chachapoyas, Peru; (93) *T. nigrella* (Bates), San Geronimo, Guatemala; (94) same, Cache, Costa Rica. 95–102, *Eresia* species. (95) *E. nauplius nauplius* (L.), Cayenne, Guyana; (96) *E. nauplius extensa* (Hall), Matto Grosso, Brazil; (97) *E. plagiata* (Röber), Santo Paulo d'Olivencia, Brazil; (98) *E. letitia letitia* Hewitson, Tolima, Colombia; (99) *E. letitia ocellata* (Röber), Chanchamayo, Peru; (100) *E. lansdorfi* (Godart), Iguassu, Parana, Brazil; (101) *E. sestia* Hewitson ♂, Paramba, Ecuador; (102) same ♀, Zaruma, Ecuador.



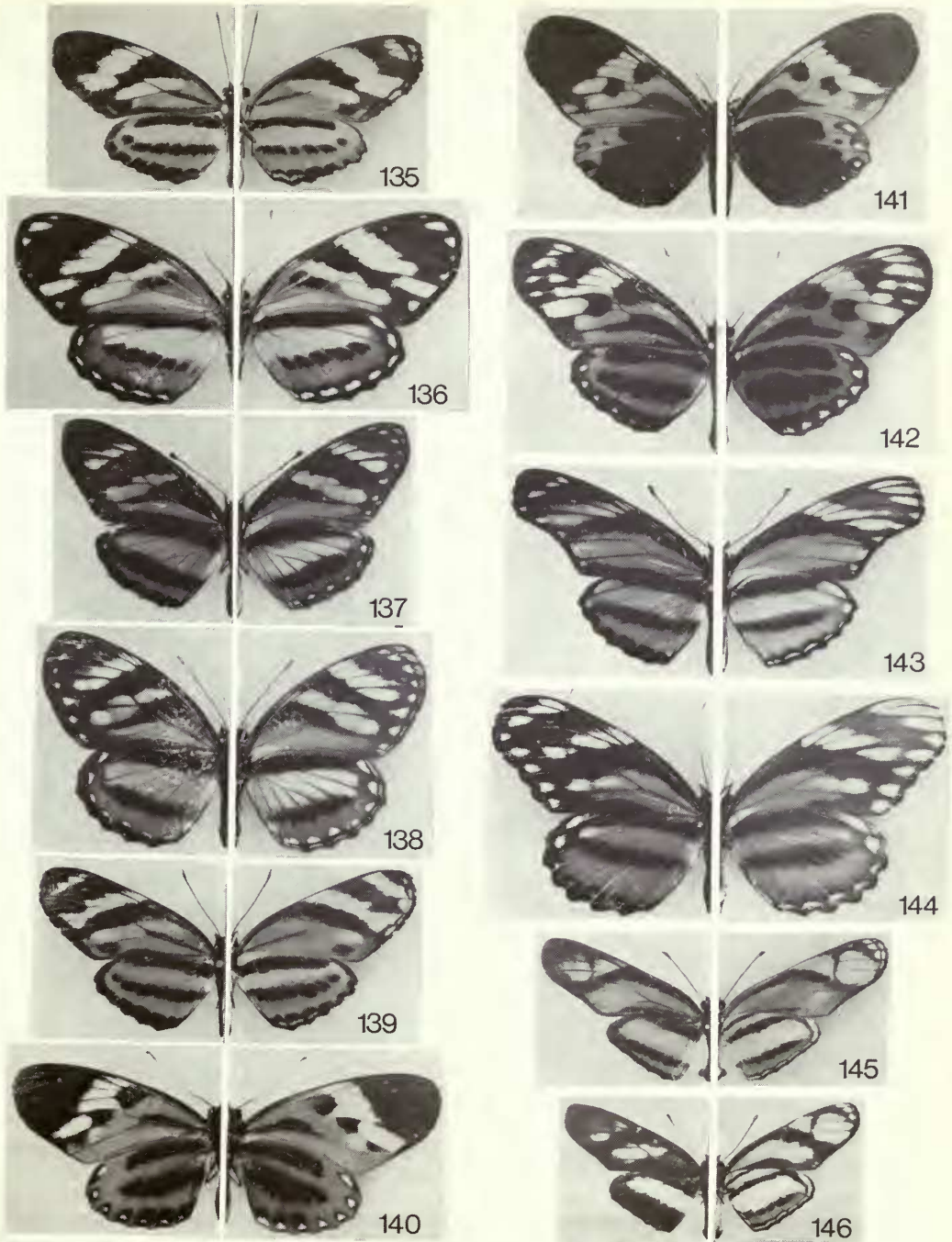
Figs 103–114 *Eresia* species. (103) *E. coela* Druce ♂, Limon, Costa Rica; (104) same ♀, Guapiles, Costa Rica; (105) *E. oblita* (Staudinger), San Esteban, Venezuela; (106) *E. carne carne* Doubleday ♂, Venezuela; (107) same ♀ holotype, no locality [Venezuela]; (108) *E. carne laias* Godman & Salvin, Rio Aquatil, W. Colombia; (109) *E. polina* Hewitson, Cochabamba, Bolivia; (110) *E. alsina* Hewitson ♂, Cache, Costa Rica; (111) same ♀, Jinotega, Nicaragua; (112) *E. cissia* (Hall), Bogota, Colombia; (113) *E. eutropia* Hewitson ♂, El Valle, Panama; (114) same ♀, El Valle, Panama.



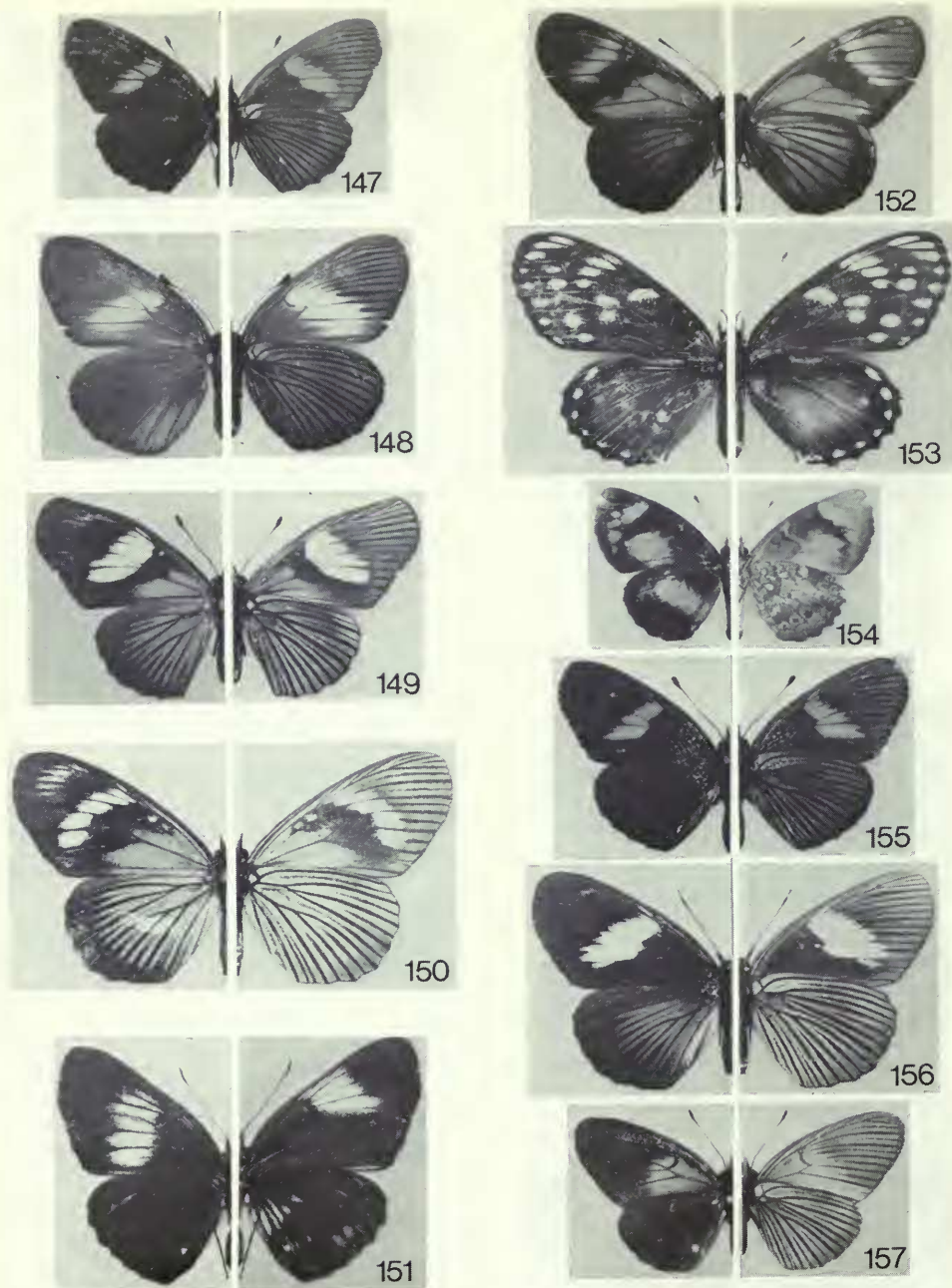
Figs 115–124 *Eresia* species. (115) *E. poecilina* Bates ♂, Chiriqui, Panama; (116) *E. mimas* (Staudinger) ♂, Rio San Juan, W. Colombia; (117) *E. melaina* sp. n. ♂, Veraguas, Panama; (118) same ♀, El Valle, Panama; (119) *E. stricta* Schaus, Guapiles, Costa Rica; (120) *E. ithomioides ithomioides* Hewitson ♂, Rio Chili, Colombia; (121) *E. poecilina* Bates ♀ holotype, Santa Fé; (122) *E. quintilla* Hewitson, Cauca, Colombia; (123) *E. anomala* sp. n. ♀ holotype, Muzo, Colombia; (124) *E. ithomioides pseudocelemina* (Strand), Bogota, Colombia; (124a) *E. ithomioides ithomioides* Hewitson ♀, Juntas, Choco, Colombia.



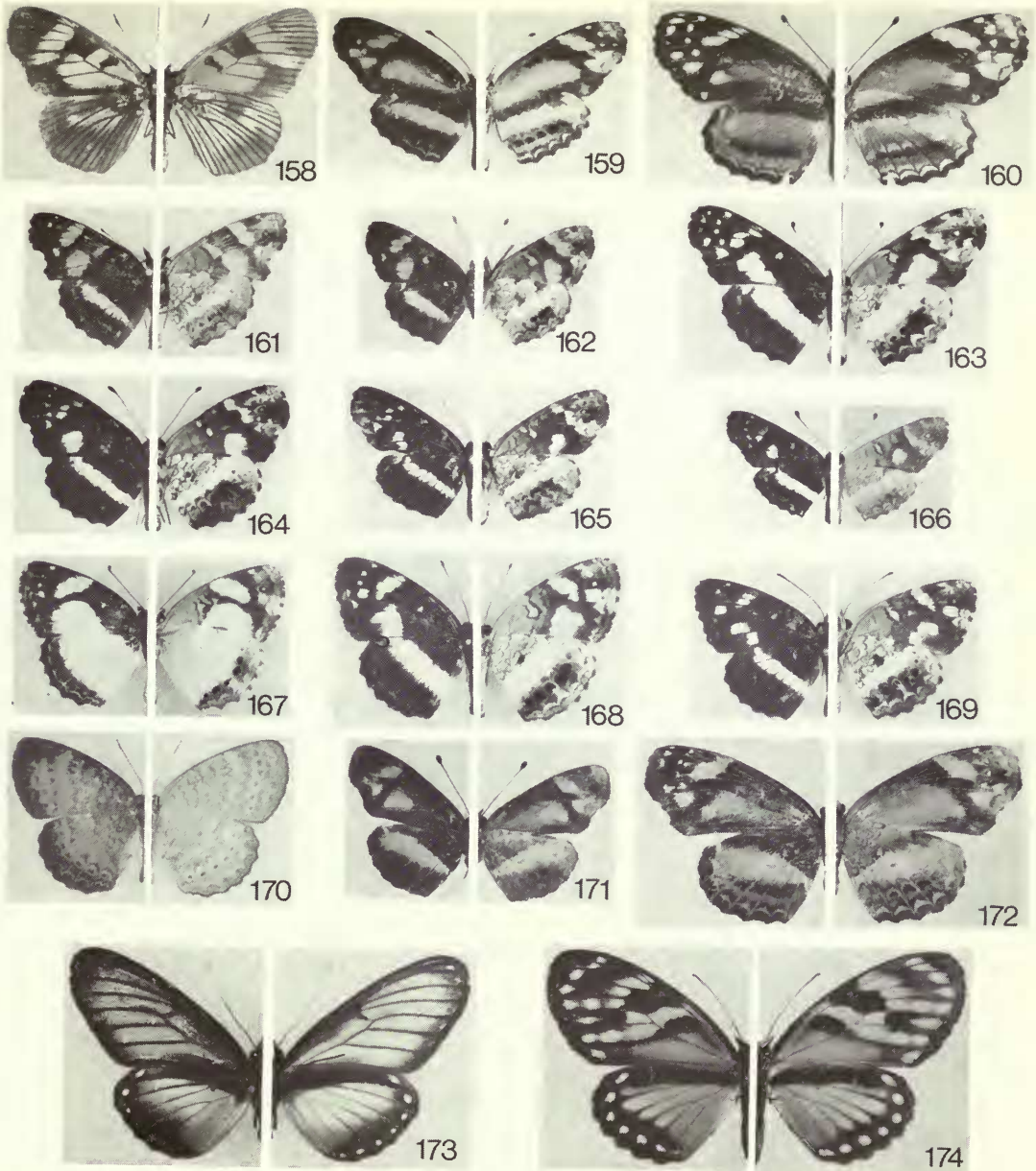
Figs 125–134 *Eresia* species. (125) *E. nigripennis* Salvin ♂, Costa Rica; (125a) same ♀, Cache, Costa Rica; (126) *E. emerantia* Hewitson ♂, Colombia; (127) same ♀, Cananche, Colombia; (128) *E. phaedima* Salvin & Godman, Chanchamayo, Peru; (129) *E. datis datis* Hewitson, Cochabamba, Bolivia; (130) *E. margaretha* Hewitson, Colombia; (131) *E. eunice eunice* (Hübner), Para, Brazil; (132) *E. eunice olivencia* Bates, São Paulo da Olivencia, Brazil; (133) *E. etesia* (Hall) ♂, French Guiana; (134) same ♀, Cayenne, French Guiana.



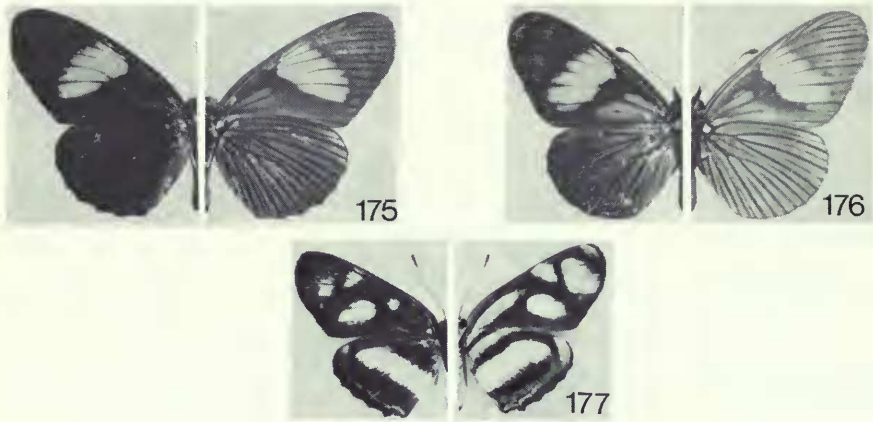
Figs 135–146 *Eresia* species. (135) *E. eunice esora* Hewitson, São Paulo, Brazil; (136) *E. erysice* (Geyer) ♀, Bahia, Brazil; (137) *E. casiphia* Hewitson ♂, Balsapamba, Bolivar, Ecuador; (138) same ♀, Balsapamba, Bolivar, Ecuador; (139) *E. mechanitis* Godman & Salvin, Chontales, Costa Rica; (140) *E. pelonia* Hewitson ♂, Sarayacu, Ecuador; (141) same, Peru; (142) same ♀, Pebas, Amazon; (143) *E. phillyra* Hewitson ♂, Cordoba, Mexico; (144) same ♀, Honduras; (145) *E. aveyrona aveyrona* Bates, Cayenne, French Guiana; (146) *E. perna* Hewitson, Espirito Santo, Brazil.



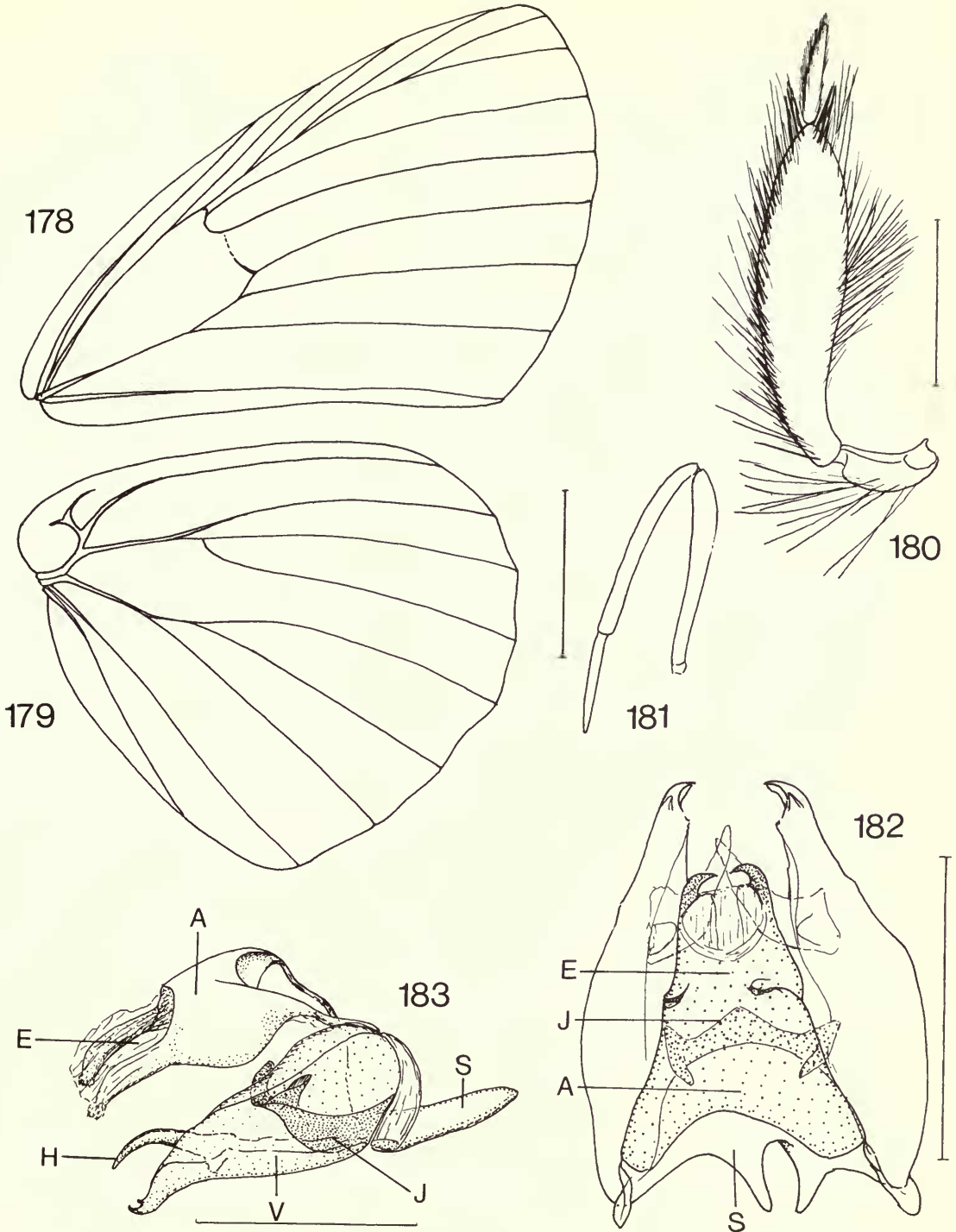
Figs 147–157 147–150, *Castilia* species. (147) *C. occidentalis* (Fassl) ♂, Cauca, Colombia; (148) same ♀, lectotype of *aurora* Röber, Zamora, Ecuador; (149) *C. perilla* (Hewitson) ♂, Peru; (150) same ♀, Moyabamba, Peru. 151–154, *Eresia* species. (151) *E. levina* Hewitson, Manizales, Colombia; (152) *E. actinote* Salvin ♂, Peru; (153) same ♀, Carillo, Costa Rica; (154) *E. selene* (Röber), Manizales, Colombia. 155–157, *Castilia* species. (155) *C. castilla* (Felder & Felder) ♂, Bogota, Colombia; (156) same ♀, Bogota, Colombia; (157) *C. neria* (Hewitson), Ecuador.



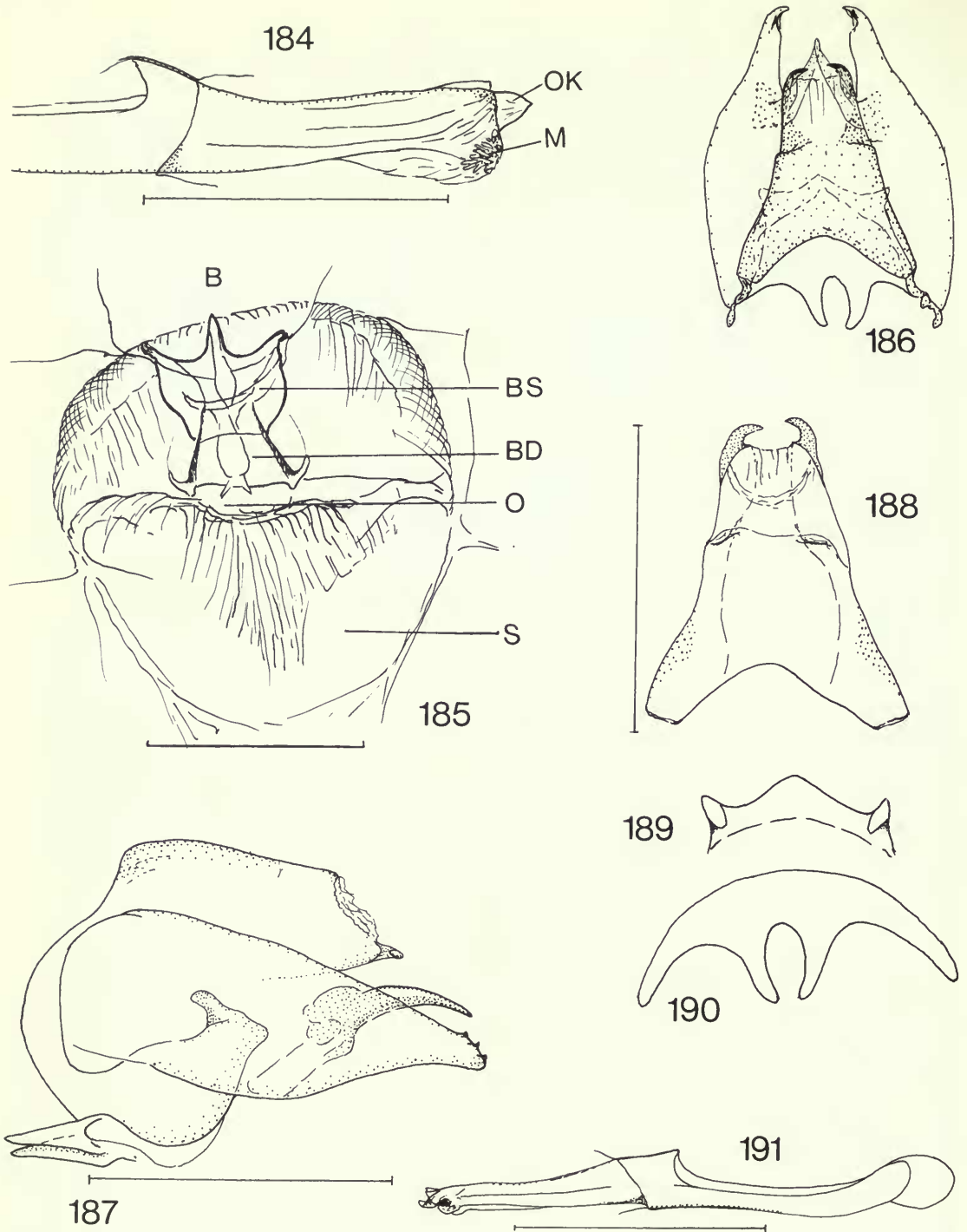
Figs 158–174 158–166, *Castilia* species. (158) *C. northbrunii* (Weeks), Cochabamba, Bolivia; (159) *C. eranites* (Hewitson) ♂, Balzapamba, Ecuador; (160) same ♀, Costa Rica; (161) *C. fulgora* (Godman & Salvin), Castajal, Costa Rica; (162) *C. fausta* (Godman & Salvin), Chiriqui, Panama; (163) *C. ofella* (Hewitson) Muzo, Colombia; (164) *C. myia* (Hewitson), Cordoba, Mexico; (165) *C. griseobasalis* (Röber), Santa Tecla, Guatemala; (166) *C. angusta* (Hewitson), Peru. 167–169, *Janatella* species. (167) *J. leucodesma* (Felder & Felder), Merida, Venezuela; (168) *J. hera* (Cramer), French Guyana; (169) *J. fellula* (Schaus), Cauca, Colombia. 170, *Mazia amazonica* (Bates), Sao Paulo d'Olivencia, Amazon. 171, 172, *Castilia* species. (171) *C. chinantlensis* (de la Maza) ♂, Oaxaca, Mexico; (172) same ♀, Oaxaca, Mexico. 173, 174, *Eresia* species. (173) *E. moesta* Salvin & Godman, Env. Bogota, Colombia; (174) *E. mimas* (Staudinger), Cauca, Juntas, Colombia.



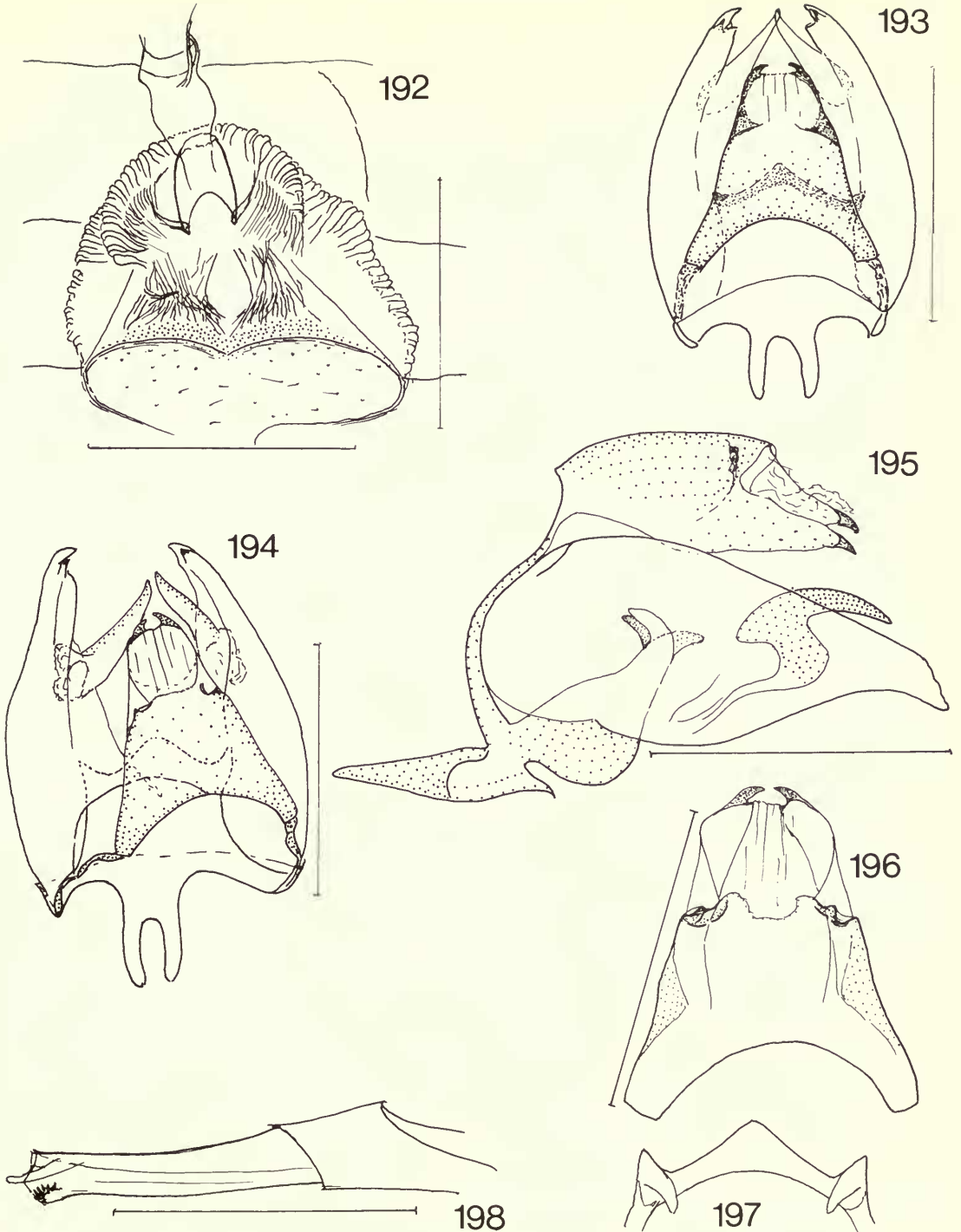
Figs 175–177 175, 176 *Castilia* species. (175) *C. perilla* f. *aricilla* (Hopffer), Pozuzo, Peru; (176) *C. perilla* f. *acraeina* (Hewitson), Moyobamba, Peru. 177, *Eresia clara* (Bates), Rio Cachiyaca, Iquitos, Peru.



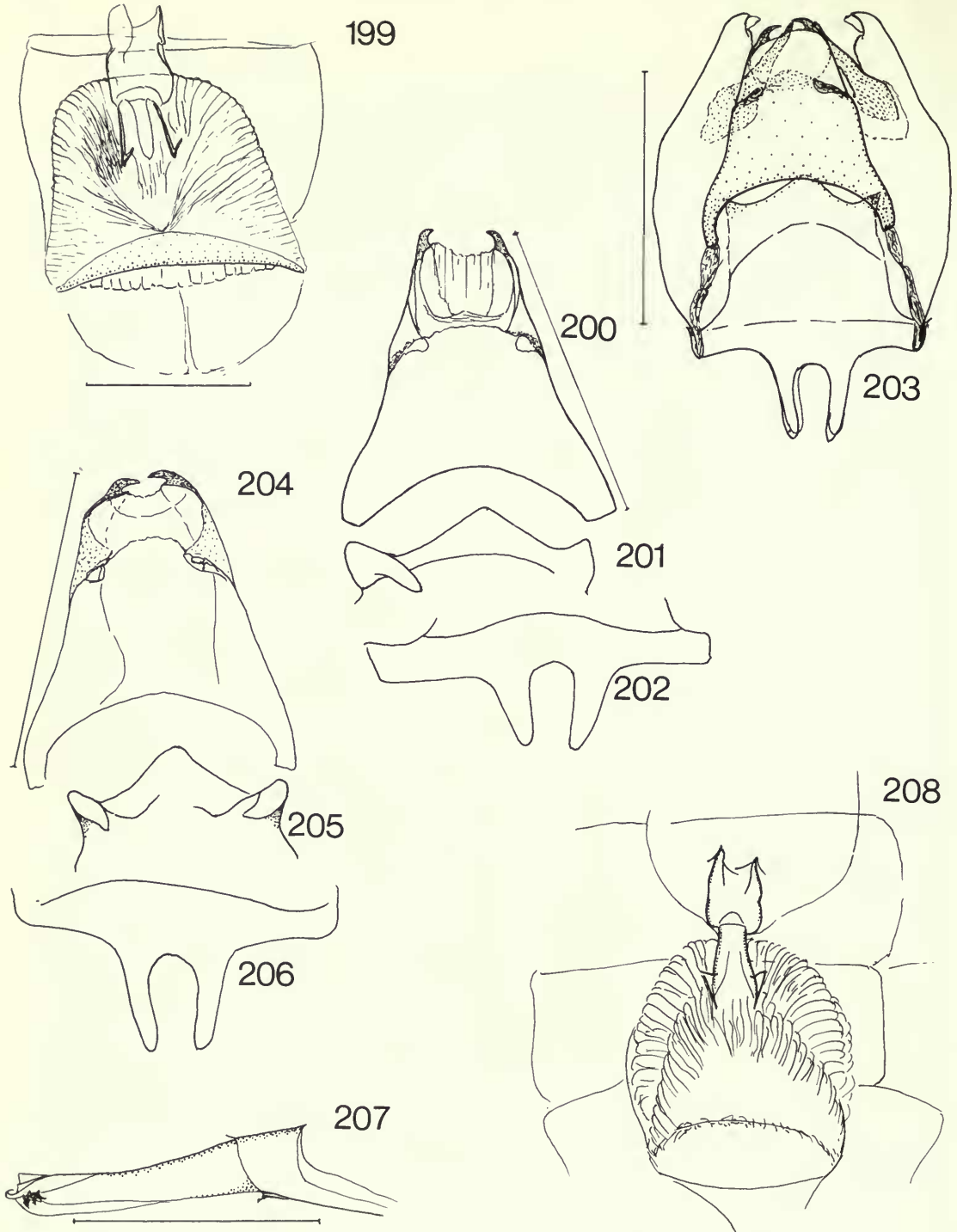
Figs 178–183 178–182, *Phyciodes* species. (178) *P. tharos*, forewing venation; (179) same, hindwing venation; (180) same, palpus, lateral view; (181) same, ♂ foreleg; (182) same, ♂ genitalia, dorsal view, anatomical structures lettered, Missouri, g/s 134. The posterior border of the juxta is seen rather obscurely through the chitinized tegumen. 183, *Eresia clara*, ♂ genitalia, lateral view, penis removed, showing dorsal structures. A = tegumen; E = scaphial extension; S = saccus; J = juxta; H = harpe; V = valve. Scale = 1 mm.



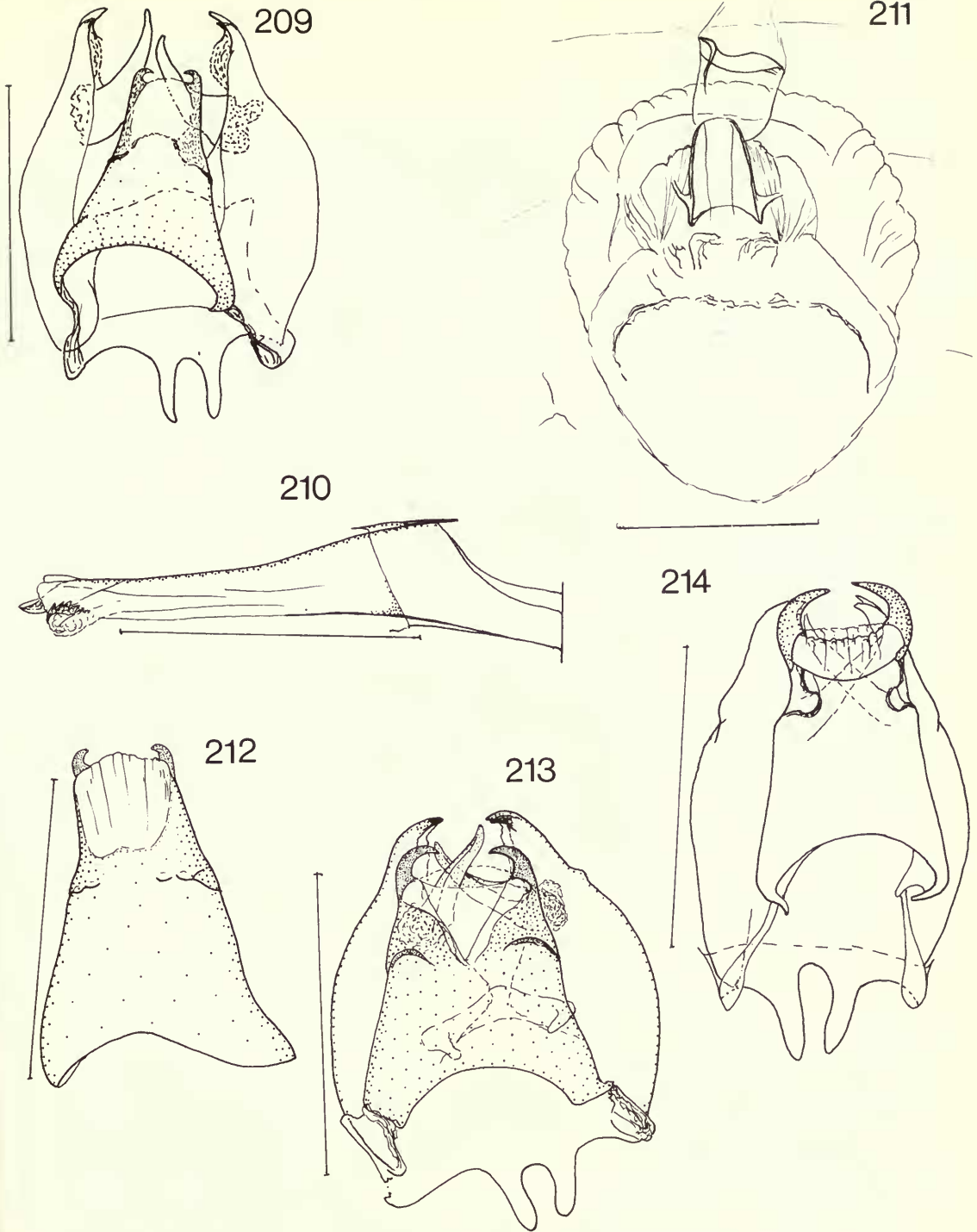
Figs 184–191 184, 185, *Eresia* species. (184) *E. clara*, penis, lateral view of distal section, showing apical structures lettered. OK = ostium keel of penis; M = morula of penis. (185) *E. phillyra*, ♀ sterigma, showing structure of the genital plate and bursal support. B = position of bursa; BS = bursal support; BD = bursal duct; O = ostium bursae; S = scutum. 186–191 *Phyciodes* species. (186) *P. tharos*, ♂ genitalia, dorsal view, Chicago, g/s 1230; (187) same, ♂ genitalia, lateral view, Connecticut, g/s 1233; (188) same, tegumen + scaphial extensions; (189) same, posterior border of juxta; (190) same, saccus; (191) same, penis, lateral view, Chicago, g/s 1230. Scale = 1 mm.



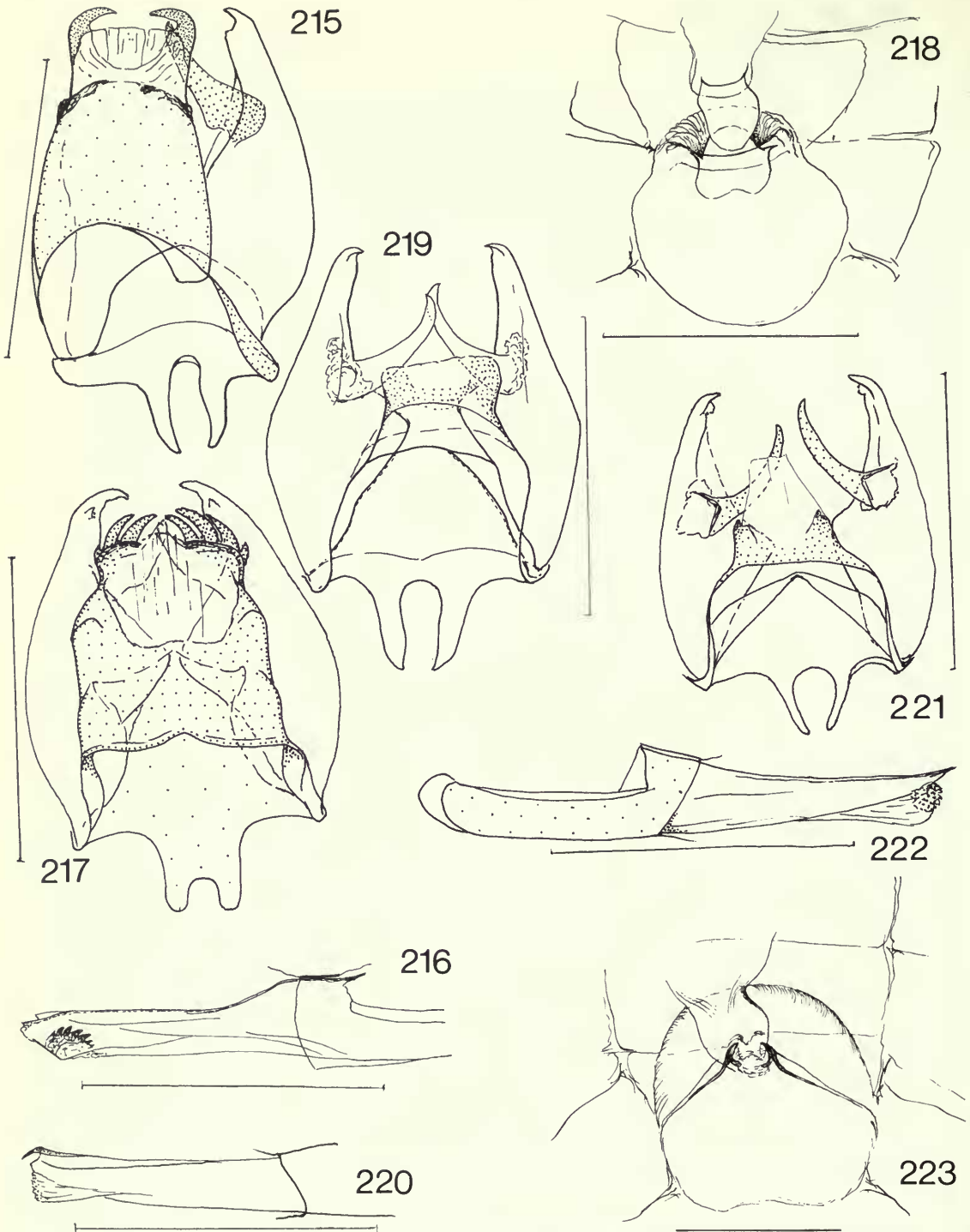
Figs 192–198 *Phyciodes* species. (192) *P. tharos*, ♀ genitalia, dorsal view, Chicago, g/s 128; (193) *P. batesii*, ♂ genitalia, dorsal view, Scranton, Penn., g/s 130; (194) *P. campestris campestris*, ♂ genitalia, dorsal view, Oregon, g/s 422; (195) same, lateral view, Yosemite, g/s 2597; (196) same, tegumen, California, g/s 421; (197) same, posterior border of juxta, California, g/s 421; (198) same, penis, lateral view, Wyoming, g/s 2592. Scale = 1 mm.



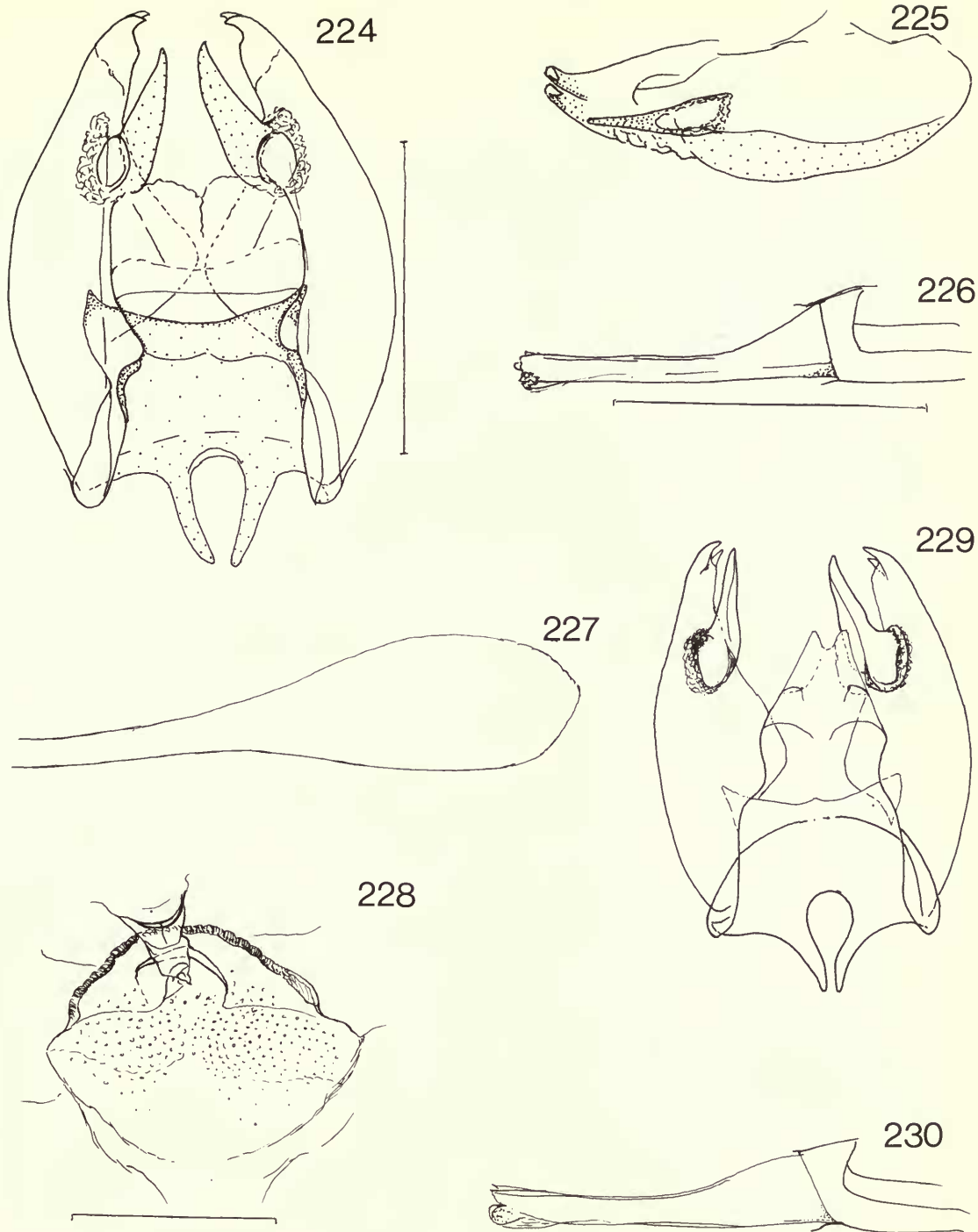
Figs 199–208 *Phyciodes* species. (199) *P. campestris campestris*, ♀ genitalia, Alberta, g/s 1057; (200) *P. c. camillus*, ♂ tegumen, Wyoming, g/s 1592; (201) same, posterior border of juxta, Wyoming, g/s 1592; (202) same, saccus, Wyoming, g/s 1592; (203) *P. montanus*, ♂ genitalia, California, g/s 423; (204) same, ♂ tegumen, California, g/s 423; (205) same, posterior border of juxta, California, g/s 423; (206) same, saccus, California, g/s 423; (207) same, penis, lateral view, California, g/s 778; (208) same, ♀ genitalia, California, g/s 2617. Scale = 1 mm.



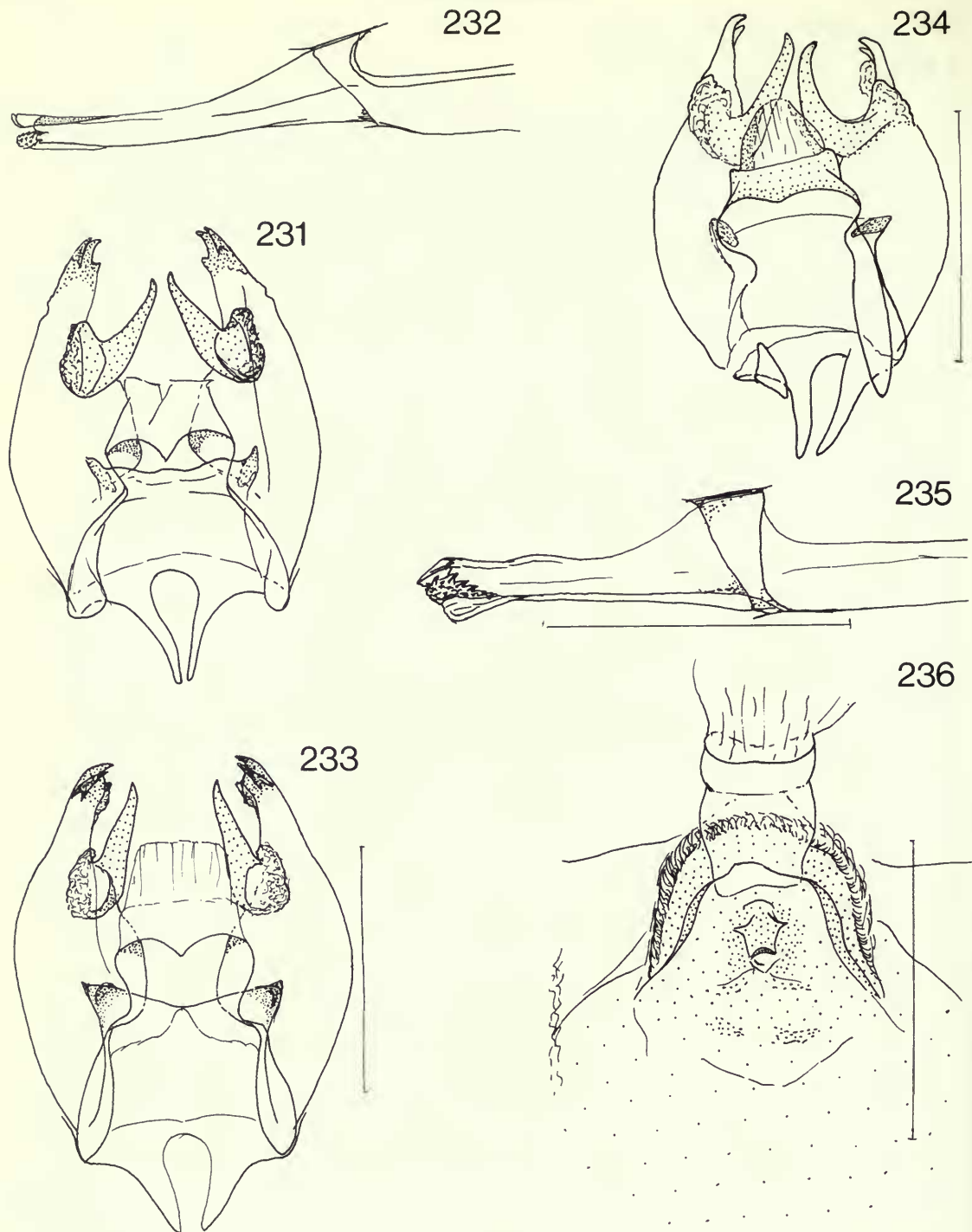
Figs 209–214 *Phyciodes* species. (209) *P. mylitta*, ♂ genitalia, dorsal view, California, g/s 119; (210) *P. m. mylitta*, penis, lateral view, Golden, Colorado, g/s 794; (211) same, ♀ genitalia, Oregon, g/s 1056; (212) *P. orseis*, tegumen and scaphial extension, Oregon, Gold Hill, g/s 780; (213) *P. pictus pictus*, ♂ genitalia, dorsal view, Tucson, Arizona, g/s 792; (214) *P. pictus pallescens*, ♂ genitalia, dorsal view, Guadalajara, g/s 793. Scale = 1 mm.



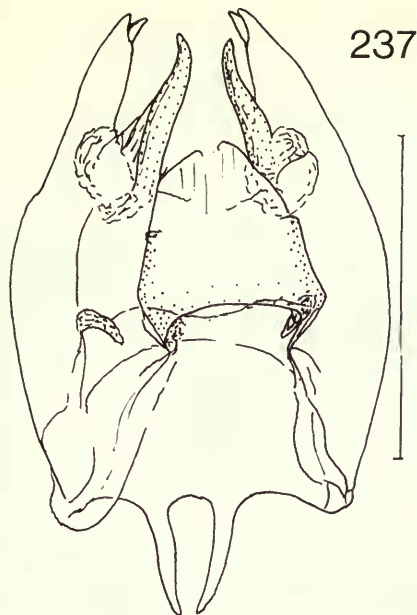
Figs 215–223 215–218, *Phyciodes* species. (215) *P. phaon*, ♂ genitalia, dorsal view, no locality, g/s 396; (216) same, penis, lateral view, no locality, g/s 396; (217) *P. vesta vesta*, ♂ genitalia, dorsal view, Texas, g/s 773; (218) same, ♀ sterigma, Colorado Springs, g/s 1079. 219–223, *Phystis* species. (219) *P. simois simois*, ♂ genitalia, dorsal view, Pernambuco, g/s 790; (220) same, penis, lateral view, Pernambuco, g/s 790; (221) *P. simois variegata* intermediate form, ♂ genitalia, dorsal view, Bahia, g/s 2755; (222) same, penis, lateral view, Bahia, g/s 2755; (223) same, ♀ genitalia, Cordoba, g/s 1078. Scale = 1 mm.



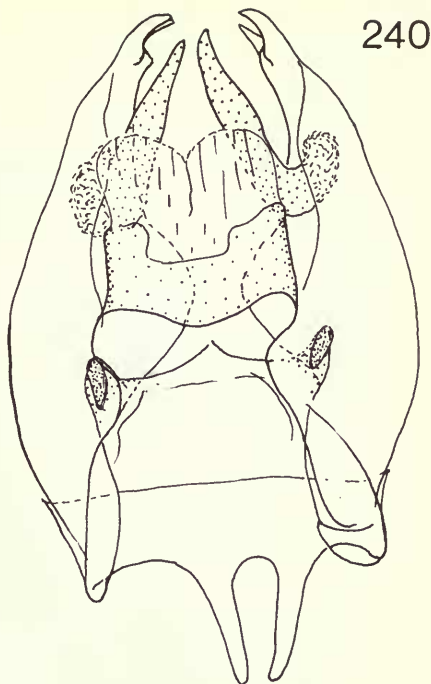
Figs 224–230 *Anthanassa* species. (224) *A. drusilla drusilla*, ♂ genitalia, dorsal view, Colombia, g/s 1036; (225) same, valve, lateral view, Venezuela, g/s 2776; (226) same, penis, lateral view, Venezuela, g/s 1032; (227) same, pyriform antennal club; (228) same, ♀ genitalia, Colombia, g/s 1033; (229) *A. ptolyca ptolyca*, ♂ genitalia, dorsal view, Guatemala, g/s 106; (230) same, penis, lateral view, Guatemala, g/s 106. Scale = 1 mm.



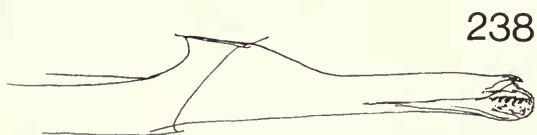
Figs 231–236 *Anthanassa* species. (231) *A. ardys ardys*, ♂ genitalia, dorsal view, Costa Rica, g/s 814; (232) same, penis, lateral view, Colombia, g/s 1350; (233) *A. ardys subota*, ♂ genitalia, dorsal view, Guatemala, g/s 2565; (234) *A. dracaena*, ♂ genitalia, dorsal view, Colombia, g/s 817; (235) same, penis, lateral view, Colombia, g/s 817; (236) same, ♀ genitalia, Colombia, g/s 817. Scale = 1 mm.



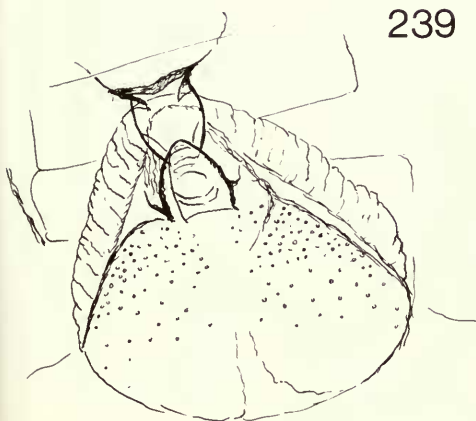
237



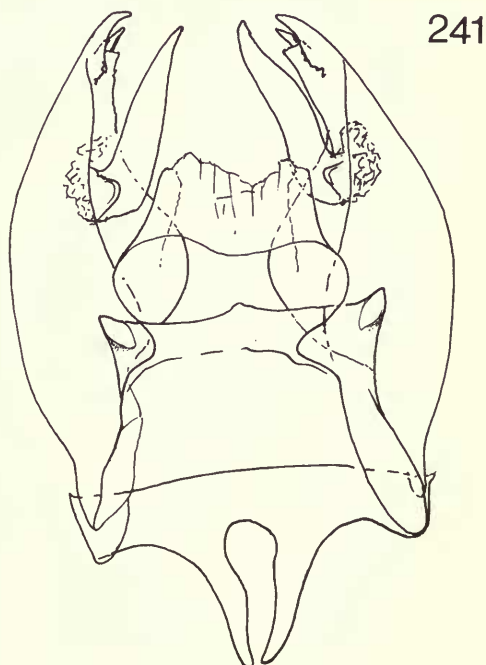
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238

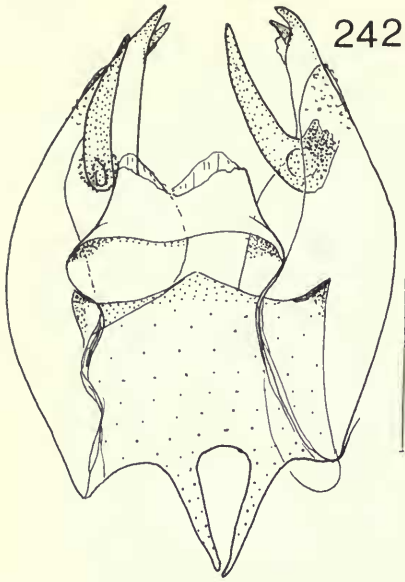


239

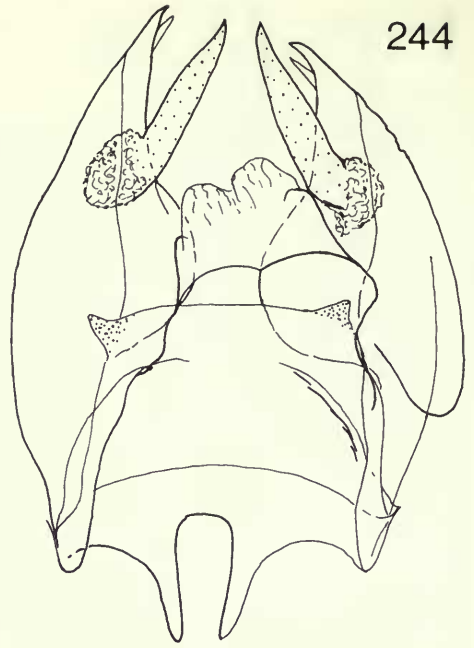


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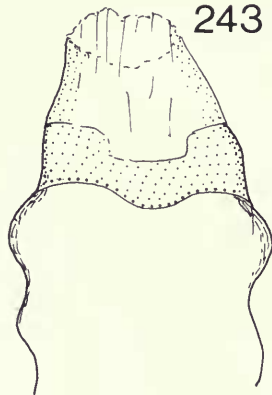
Figs 237–241 *Anthanassa* species. (237) *A. texana texana*, ♂ genitalia, dorsal view, Texas, g/s 1042; (238) same, penis, lateral view, Texas, g/s 1042; (239) same, ♀ genitalia, Texas, g/s 1050; (240) *A. alexon subconcolor*, ♂ genitalia, dorsal view, Arizona, g/s 801; (241) *A. acesas*, ♂ genitalia, dorsal view, Venezuela, g/s 1024. Scale = 1 mm.



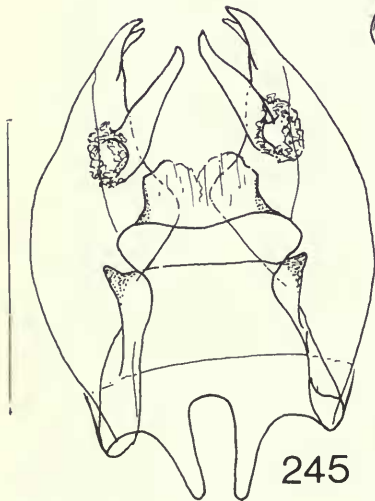
242



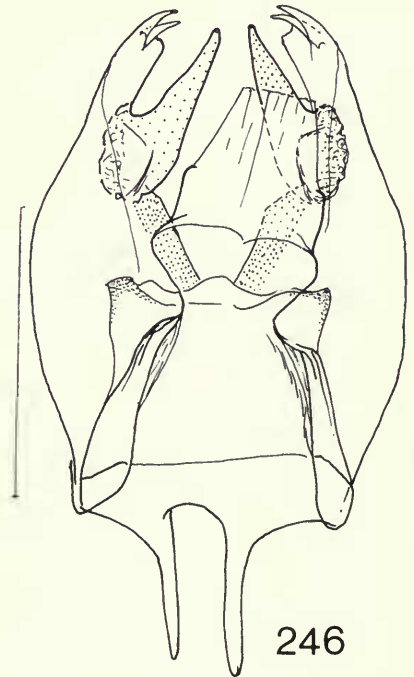
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243

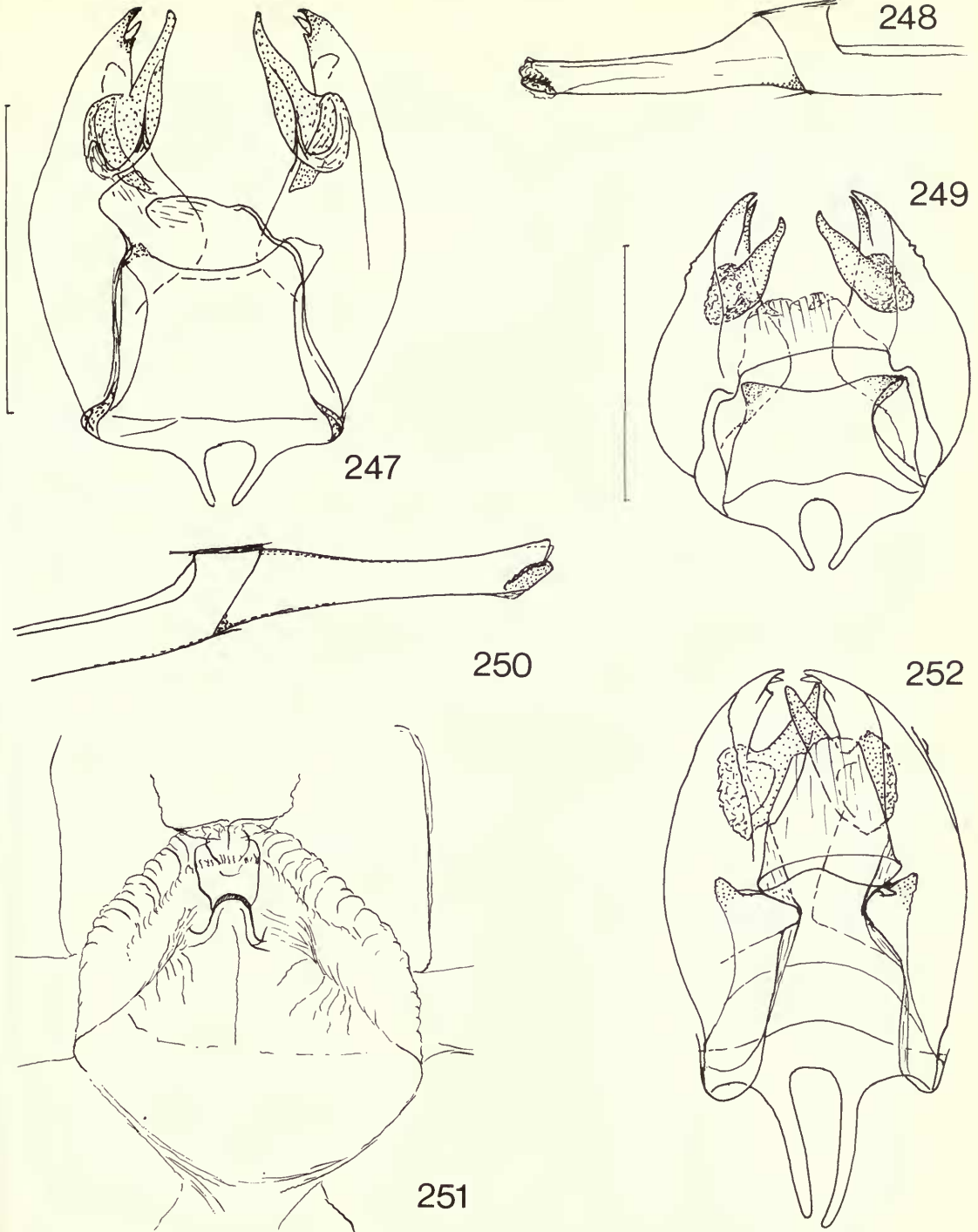


245

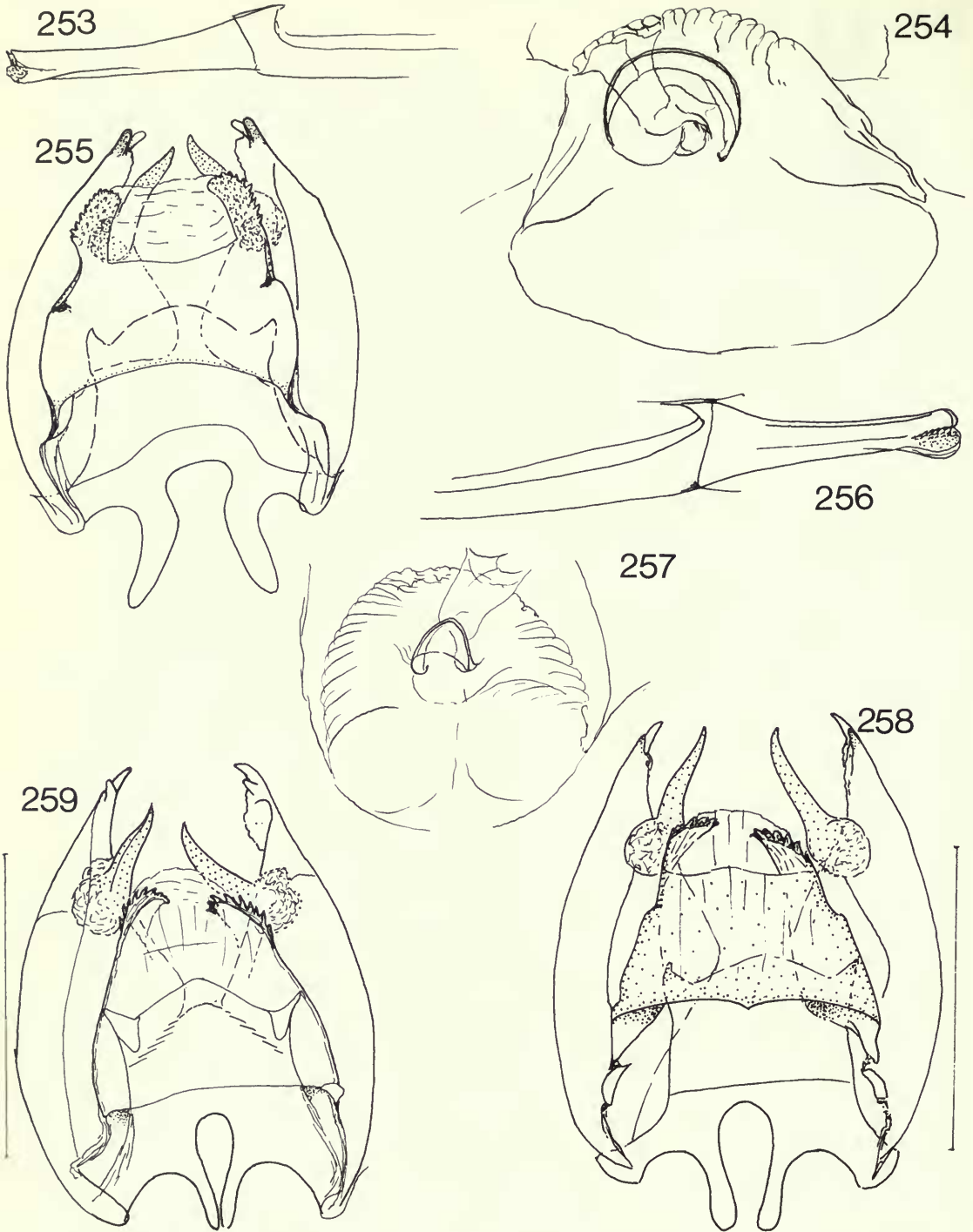


246

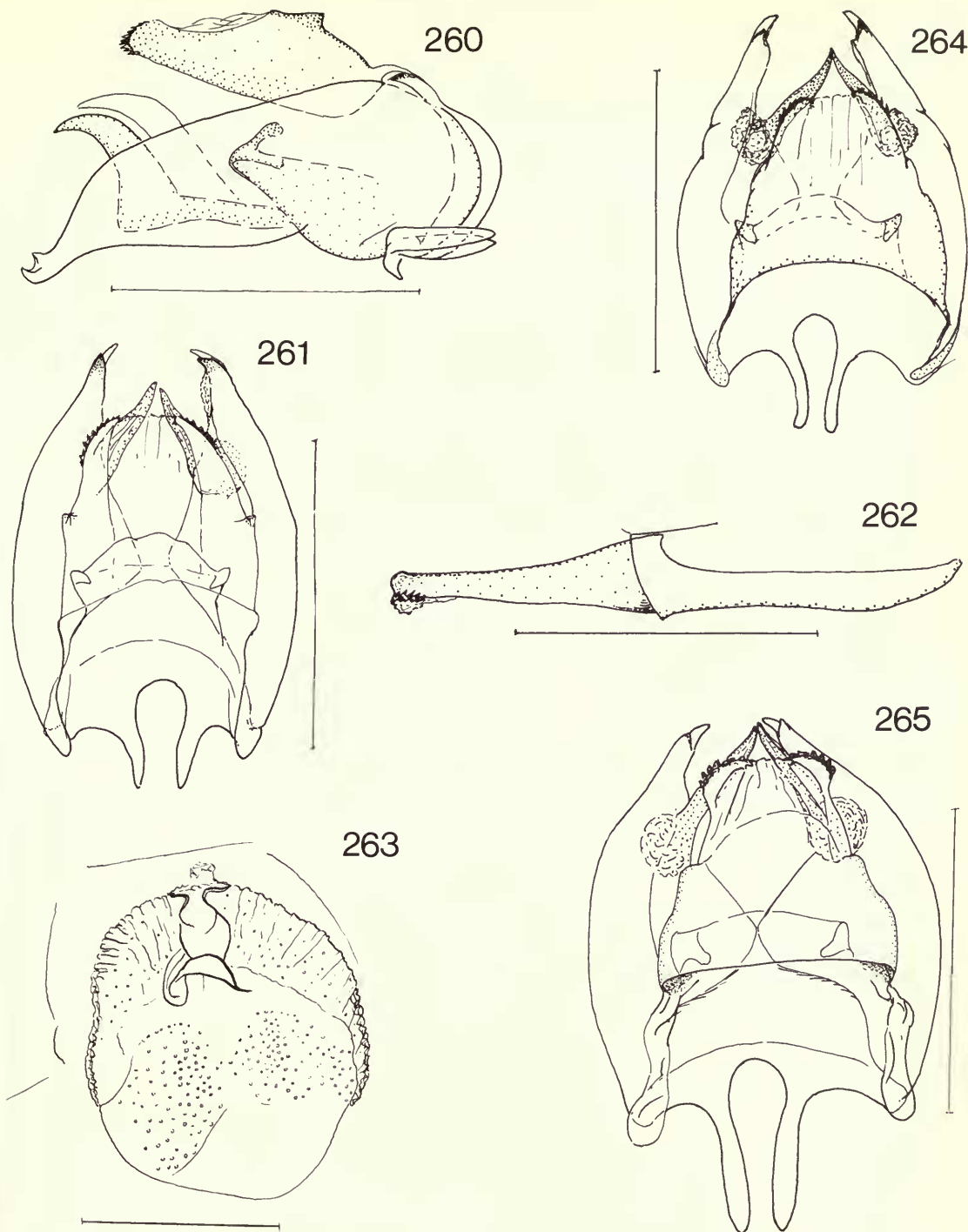
Figs 242–246 *Anthanassa* species. (242) *A. nebulosa*, ♂ genitalia, dorsal view, N. Colombia, Sierra Nevada de Sante Marta, Chichihua Valley (f. *castianira*), g/s 110; (243) same, tegumen and scaphial extension, g/s 1252; (244) *A. argentea*, ♂ genitalia, dorsal view, Guatemala, g/s 1018; (245) *A. atronia*, ♂ genitalia, dorsal view, Guatemala, g/s 829; (246) *A. otones*, ♂ genitalia, dorsal view, Guatemala, g/s 1247. Scale = 1 mm.



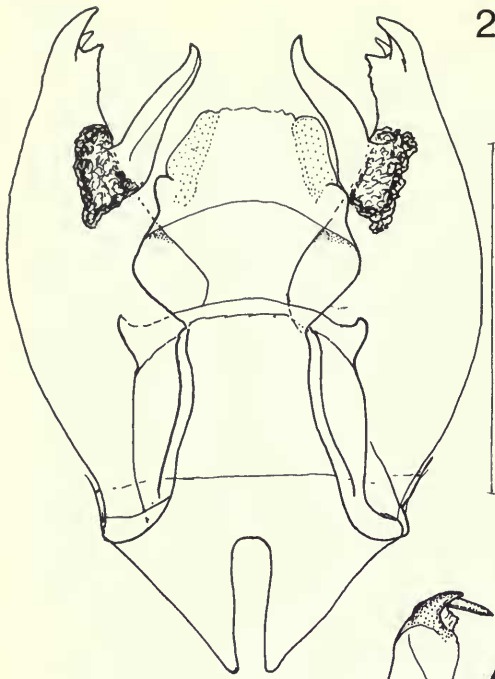
Figs 247–252 *Anthanassa* species. (247) *A. annulata*, ♂ genitalia, dorsal view, Ecuador, g/s 1351; (248) same, penis, lateral view of distal section, Ecuador, g/s 1351; (249) *A. crithona*, ♂ genitalia, dorsal view, Costa Rica, g/s 2578; (250) same, penis, lateral view, Costa Rica, g/s 807; (251) same, ♀ genitalia, dorsal view, Panama, g/s 1049; (252) *A. fulviplaga*, ♂ genitalia, dorsal view, Costa Rica, g/s 833. Scale = 1 mm.



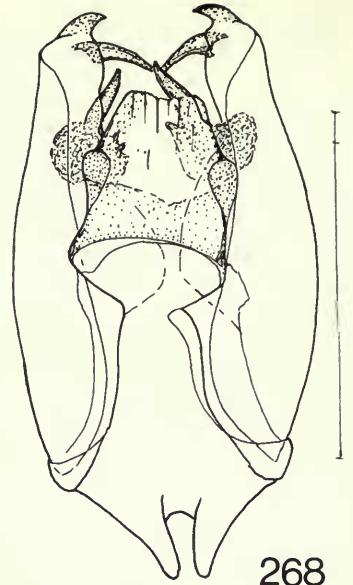
Figs 253–259 *Anthanassa* species. (253) *A. fulviplaga*, penis, lateral view, Costa Rica, g/s 833; (254) same, ♀ genitalia, Costa Rica, g/s 1066; (255) *A. hermas*, ♂ genitalia, dorsal view, Paraguay, g/s 111; (256) same, penis, lateral view, Paraguay, g/s 111; (257) same, ♀ genitalia, dorsal view, Brazil, g/s 1067; (258) *A. frisia*, ♂ genitalia, Cuba, g/s 2780; (259) same, ♂ genitalia, Jamaica, g/s 879. Scale = 1 mm.



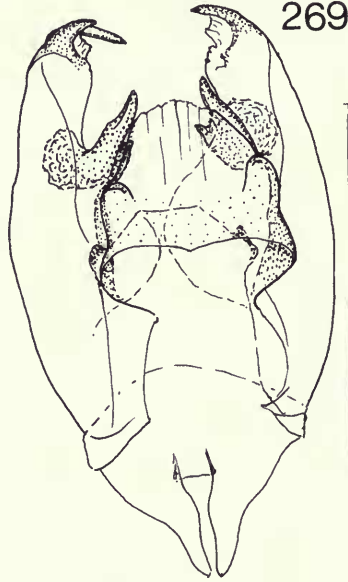
Figs 260–265 *Anthanassa* species. (260) *A. frisia*, ♂ genitalia, lateral view, Jamaica, g/s 879; (261) *A. tulcis*, ♂ genitalia, Panama, g/s 882; (262) same, penis, Panama, g/s 882; (263) same, ♀ genitalia, Panama, g/s 117; (264) *A. dubia*, ♂ genitalia, Venezuela, San Esteban, g/s 2783; (265) *A. taeniata*, ♂ genitalia, Peru, g/s 880. Scale = 1 mm.



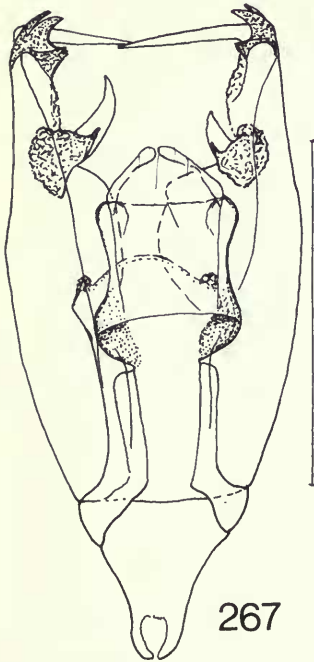
266



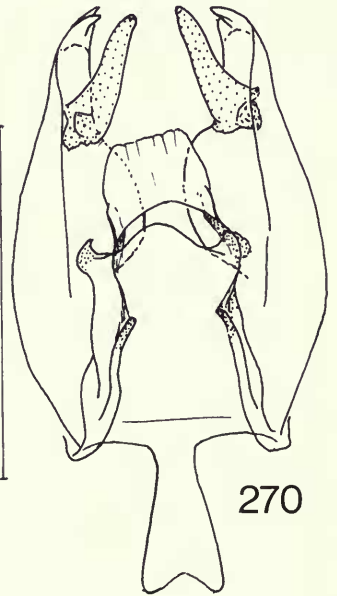
268



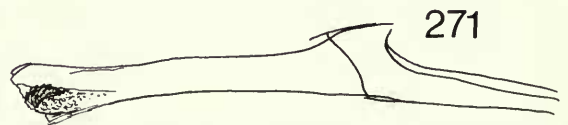
269



267

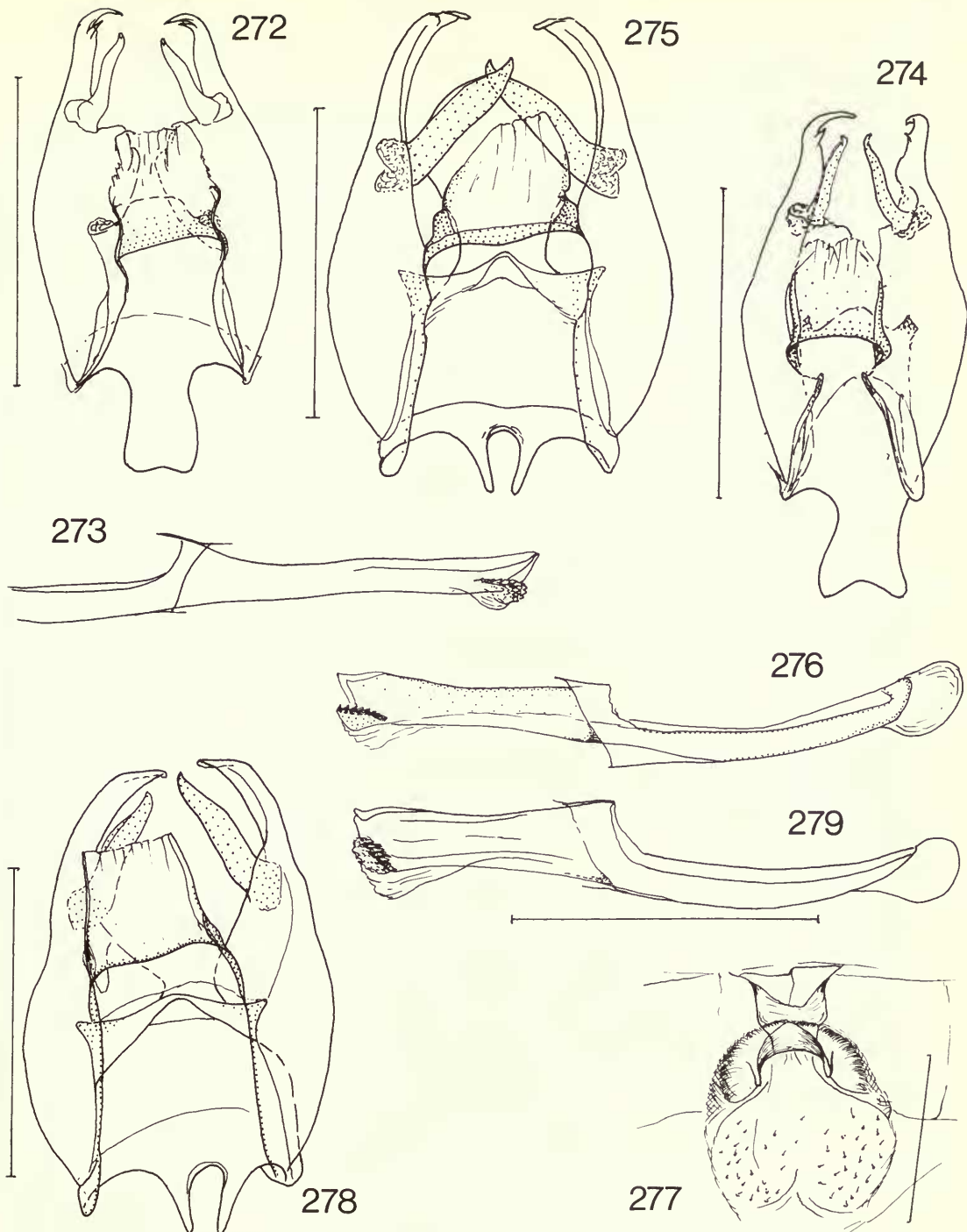


270

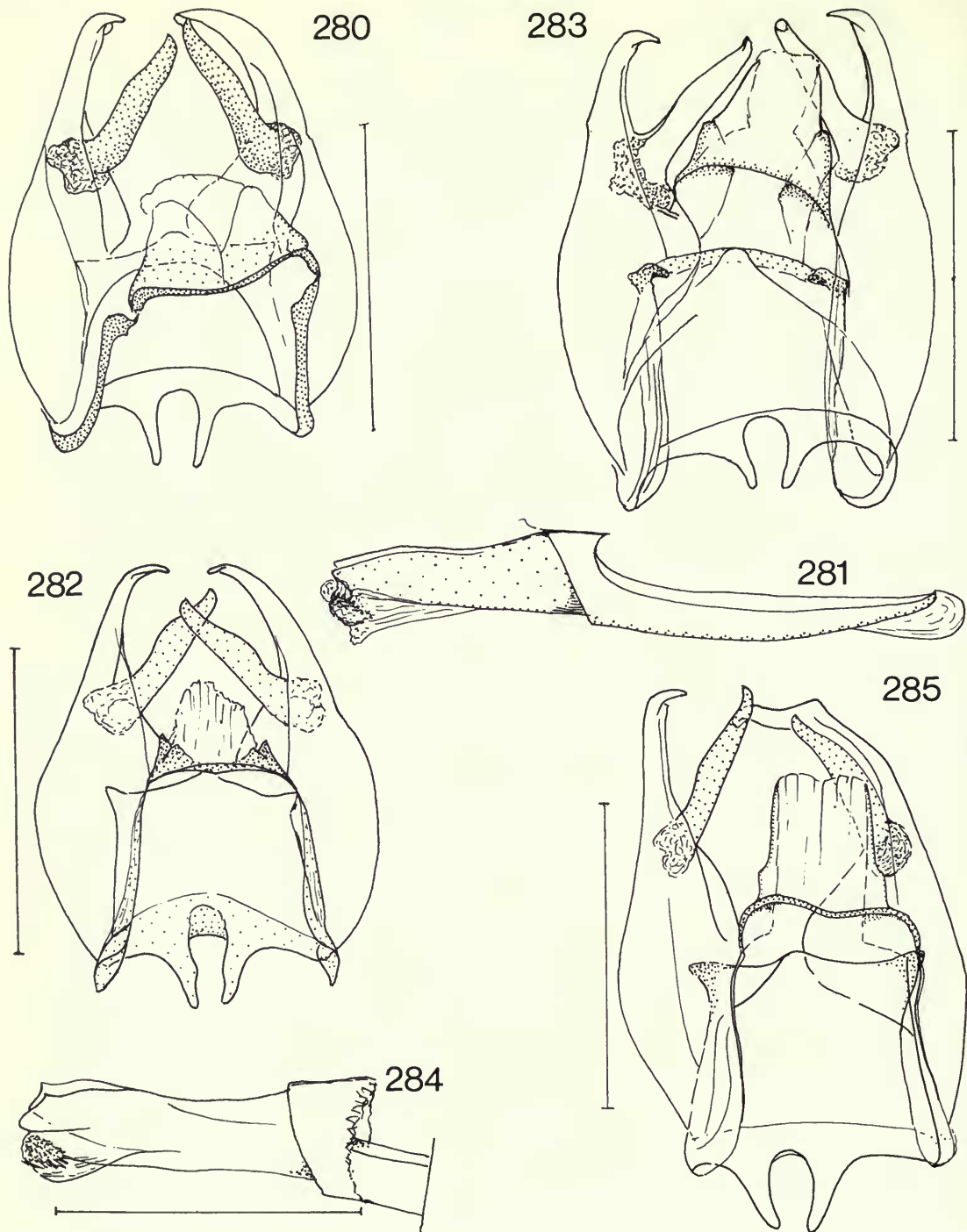


271

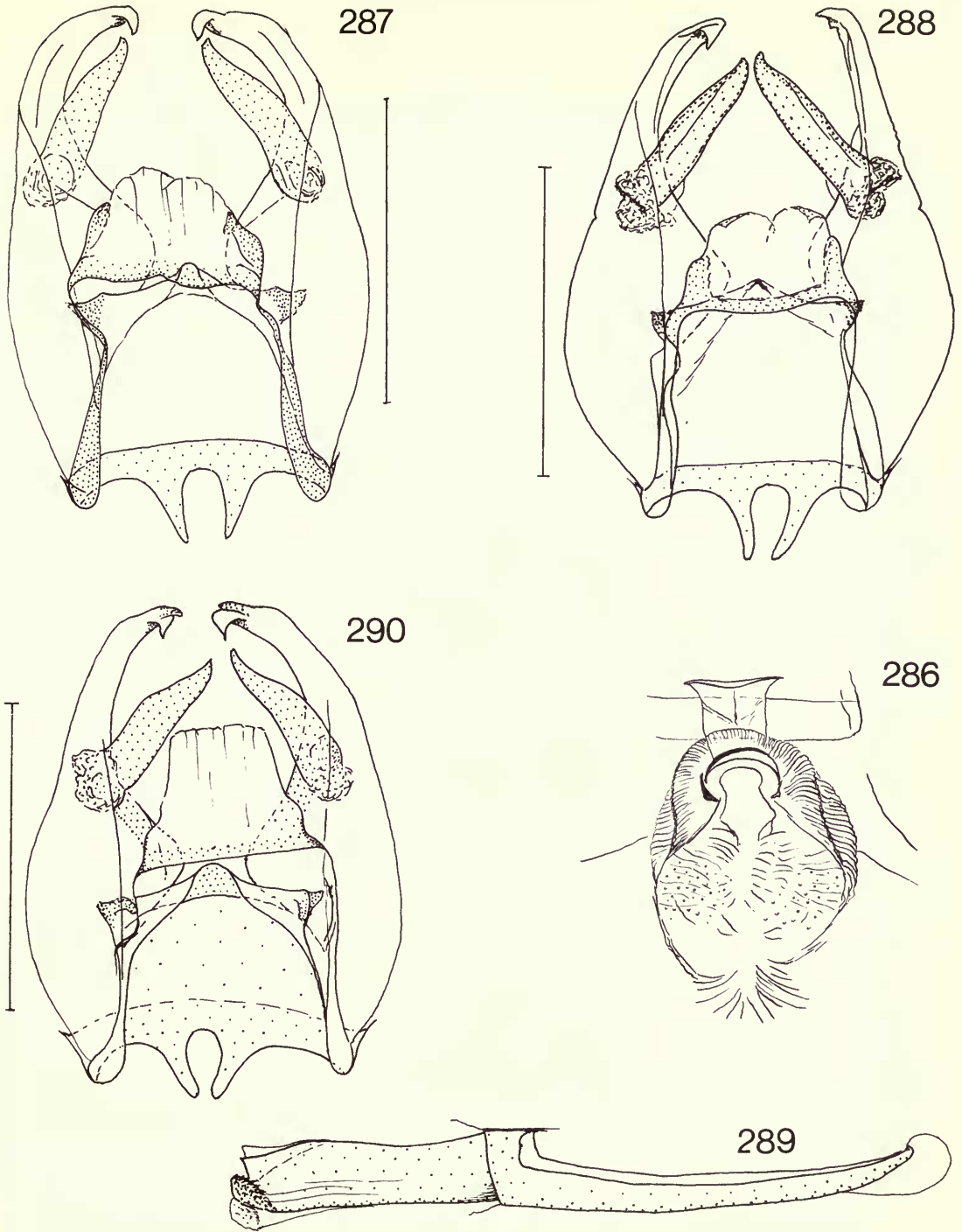
Figs 266–271 266–269, *Anthanassa* species. (266) *A. sosis*, ♂ genitalia, dorsal view, Panama, Chiriqui, g/s 1017; (267) *A. drymaea*, ♂ genitalia, dorsal view, Guatemala, g/s 836; (268) *A. sitalces*, ♂ genitalia, dorsal view, Guatemala, g/s 1346; (269) *A. cortes*, ♂ genitalia, Mexico, g/s 1029. 270, 271, *Dagon* species. (270) *D. pusillus*, ♂ genitalia, dorsal view, no locality, g/s 802; (271) same, penis, lateral view, no locality, g/s 802. Scale = 1 mm.



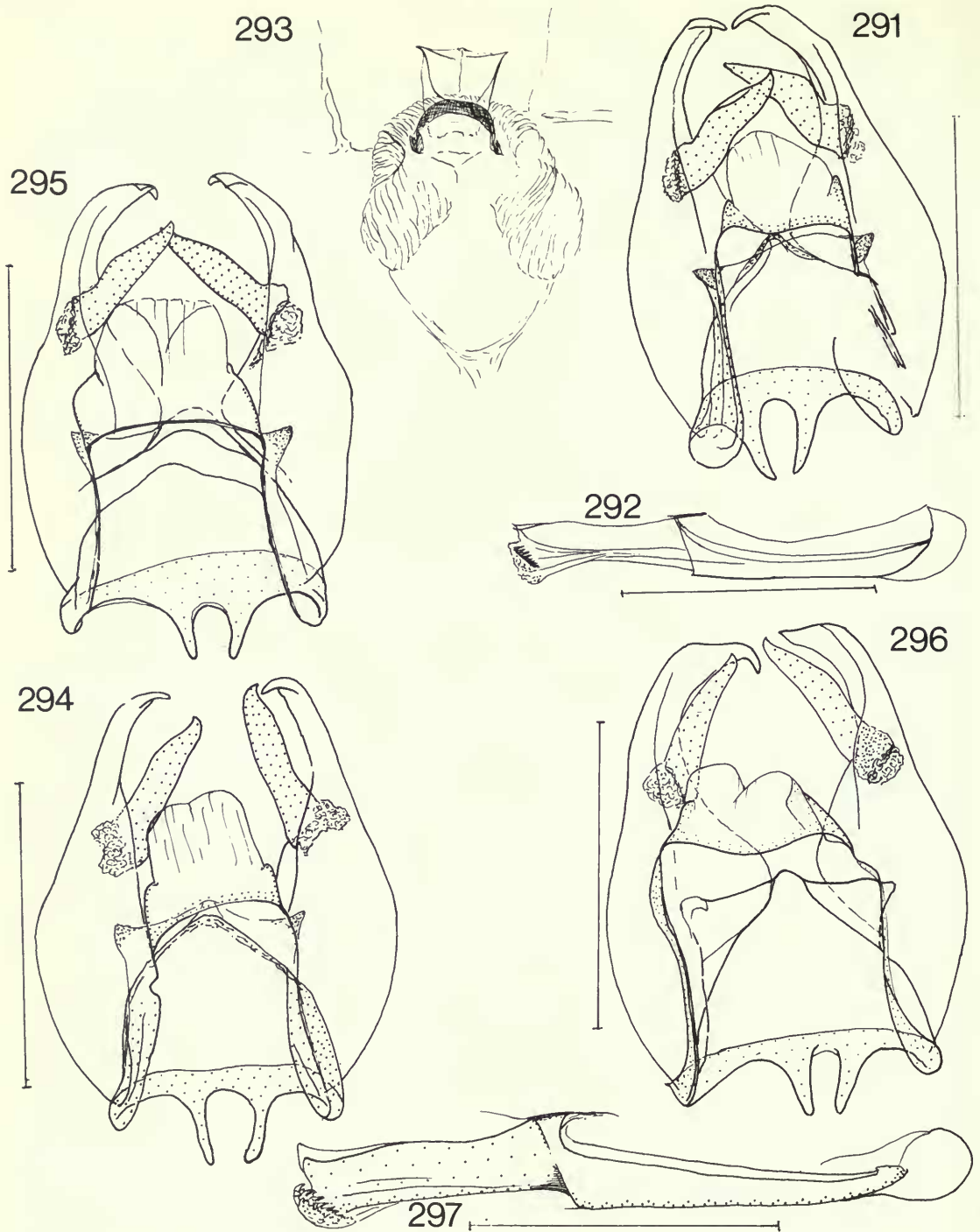
Figs 272-279 272-274, *Dagon* species. (272) *D. catula*, ♂ genitalia, dorsal view, Bolivia, g/s 812; (273) same, penis, lateral view, Bolivia, g/s 812; (274) *D. morenus*, ♂ genitalia, dorsal view, Peru, g/s 2768. 275-279, *Telenassa* species. (275) *T. teletusa*, ♂ genitalia, dorsal view, Brazil, Novo Friburgo, g/s 2563; (276) same, penis, lateral view, Brazil, Novo Friburgo, g/s 2563; (277) same, ♀ genitalia, Brazil, Tucuman, g/s 1049; (278) *T. burchelli*, ♂ genitalia, dorsal view, Peru, Chanchamayo, g/s 799; (279) same, penis, lateral view, Peru, Chanchamayo, g/s 799. Scale = 1 mm.



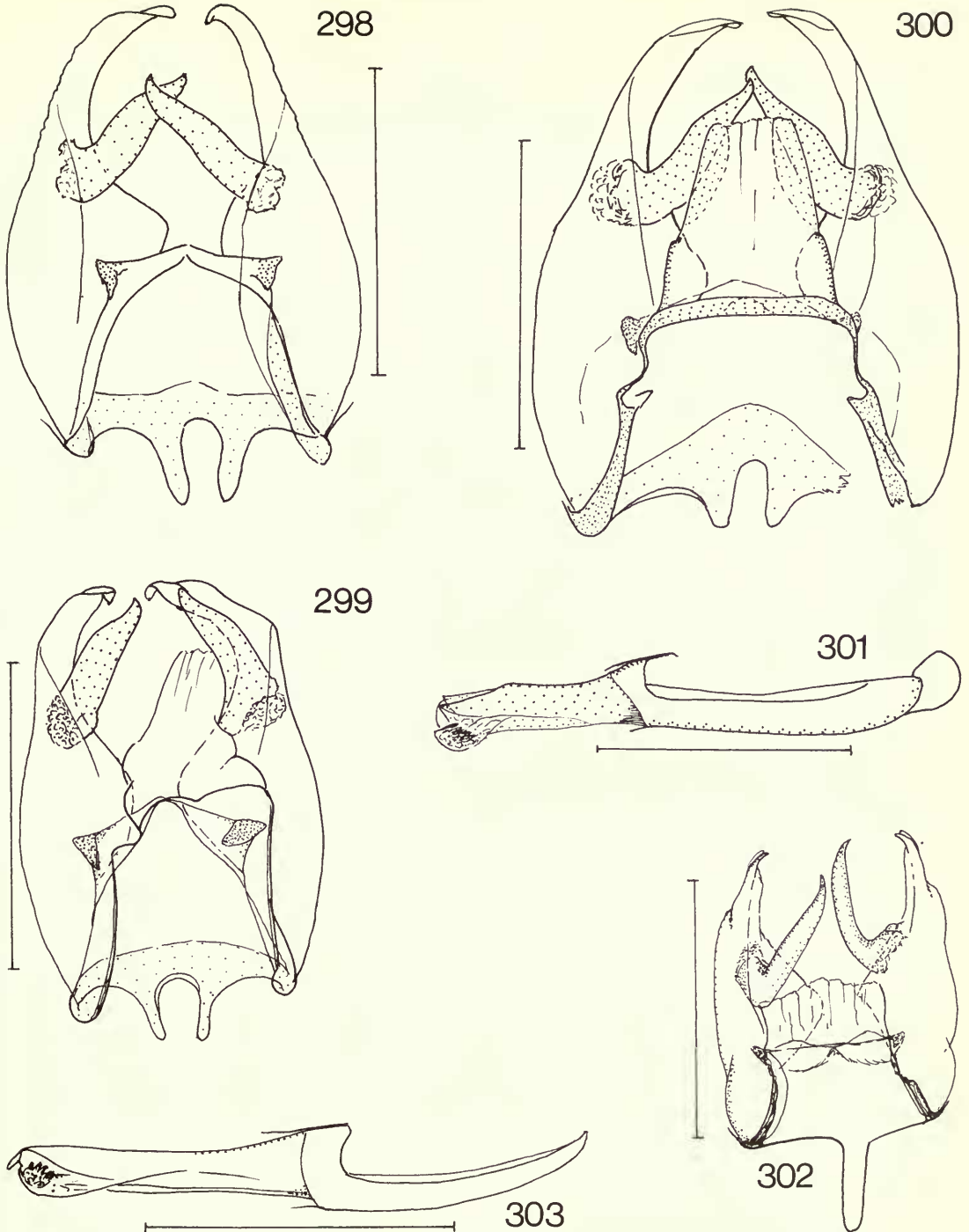
Figs 280–285 *Telenassa* species. (280) *T. berenice*, ♂ genitalia, Peru, Amazonas, g/s 2801; (281) same, penis, Peru, g/s 936; (282) *T. signata*, ♂ genitalia, dorsal view, Argentina, Salta, g/s 2749; (283) *T. abas*, ♂ genitalia, dorsal view, Colombia, Frontino, g/s 2749; (284) same, penis, lateral view, Colombia, 'Bogota', g/s 2752; (285) *T. jana*, ♂ genitalia, dorsal view, Peru, Amazonas, g/s 109. Scale = 1 mm.



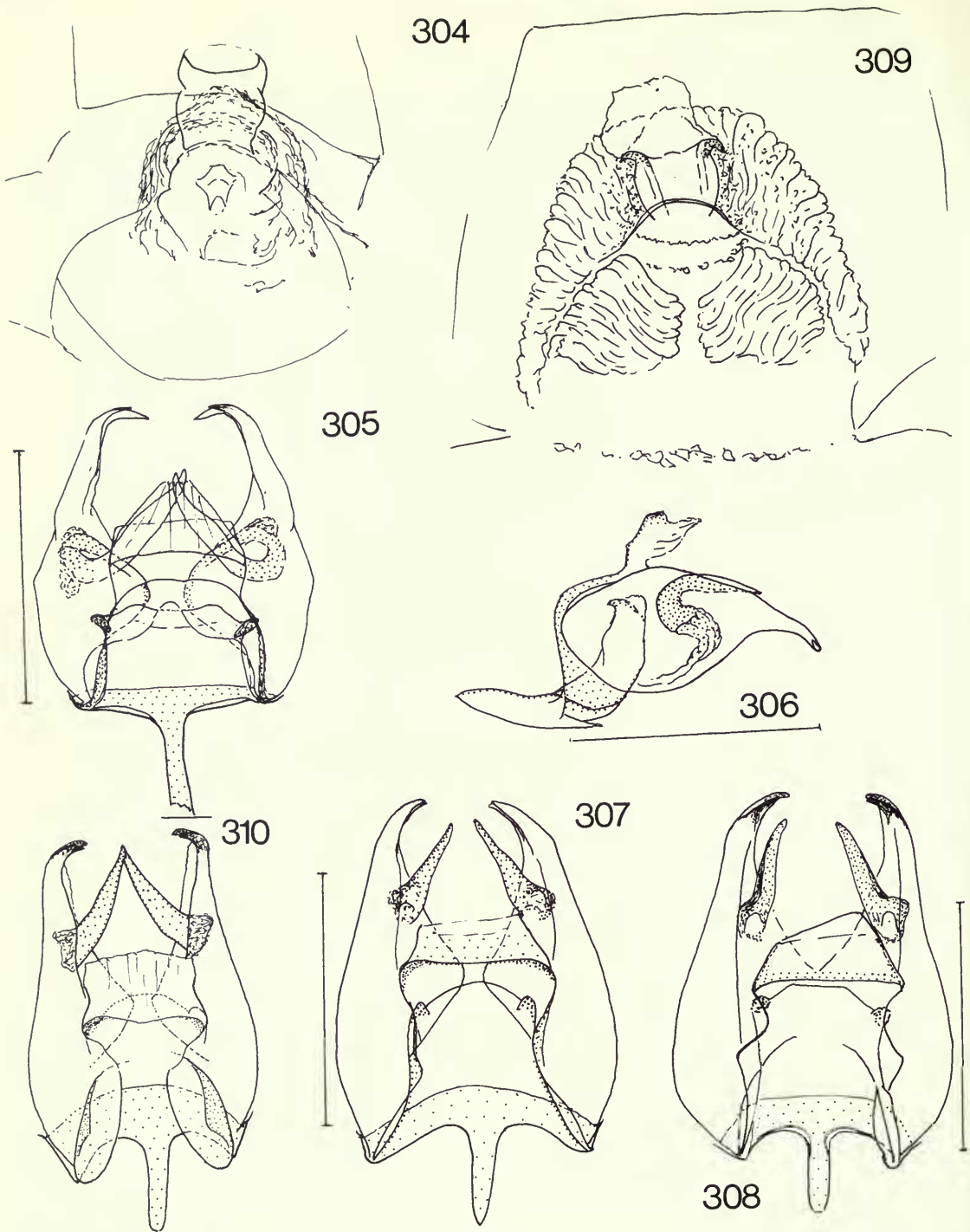
Figs 286–290 *Telenassa* species. (286) *T. jana*, ♀ genitalia, Peru, Chachapoyas, g/s 1062; (287) *T. elaphina*, ♂ genitalia, dorsal view, Bolivia, g/s 809; (288) *T. nana*, ♂ genitalia, dorsal view, S. Peru, Cosnipata Valley, g/s 2575; (289) same, penis, lateral view, g/s 810; (290) *T. nussia*, ♂ genitalia, Peru, g/s 1028. Scale = 1 mm.



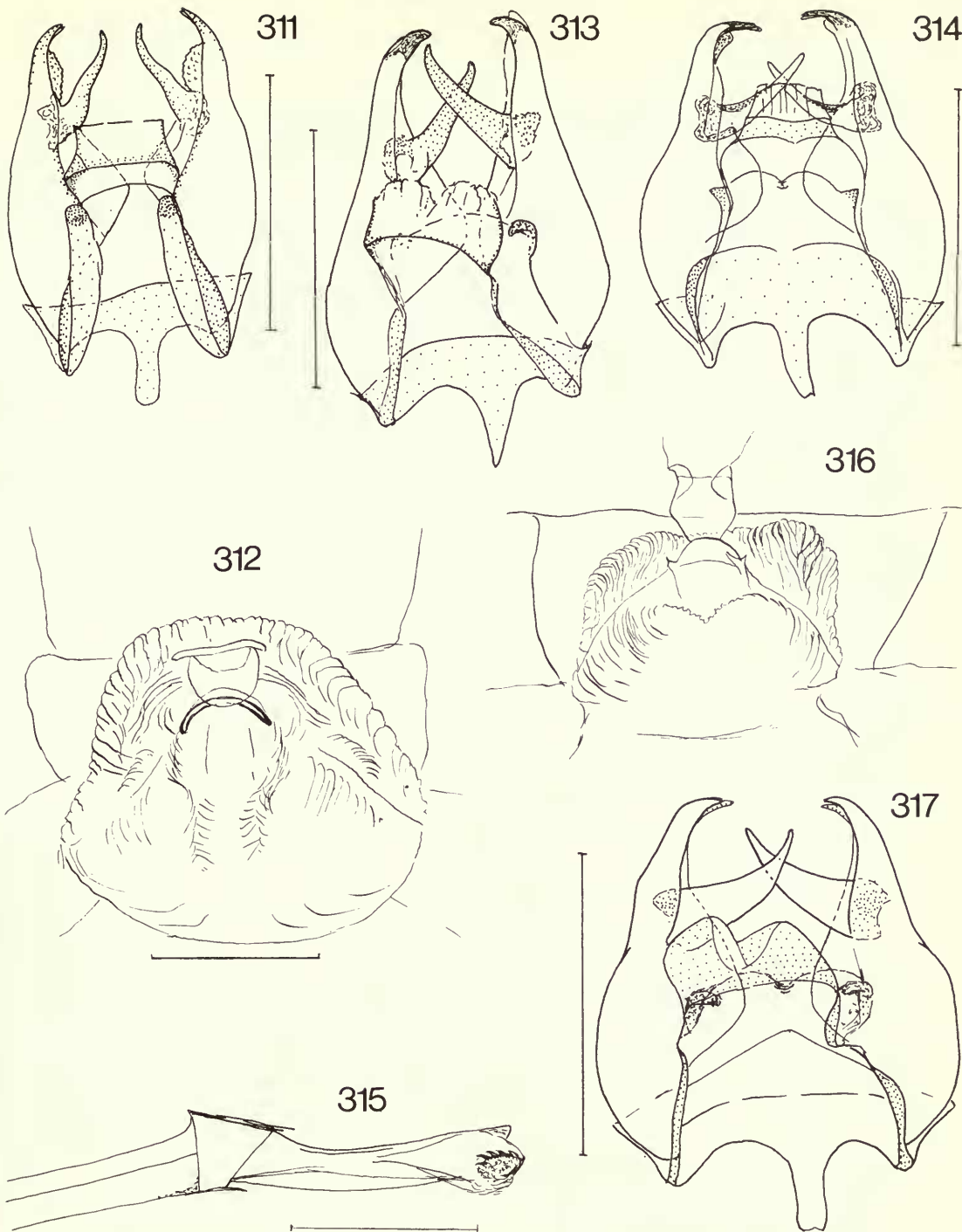
Figs 291–297 *Telenassa* species. (291) *T. notus*, ♂ genitalia, dorsal view, Peru, g/s 808; (292) same, penis, lateral view, Peru, g/s 808; (293) same, ♀ genitalia, dorsal view, Peru, g/s 1085; (294) *T. gaujoni*, ♂ genitalia, dorsal view, Ecuador, g/s 1016; (295) *T. trimaculata*, ♂ genitalia, dorsal view, Bolivia, g/s 899; (296) *T. flavocincta*, ♂ genitalia, dorsal view, Ecuador, g/s 1025; (297) same, penis, Ecuador, g/s 1025. Scale = 1 mm.



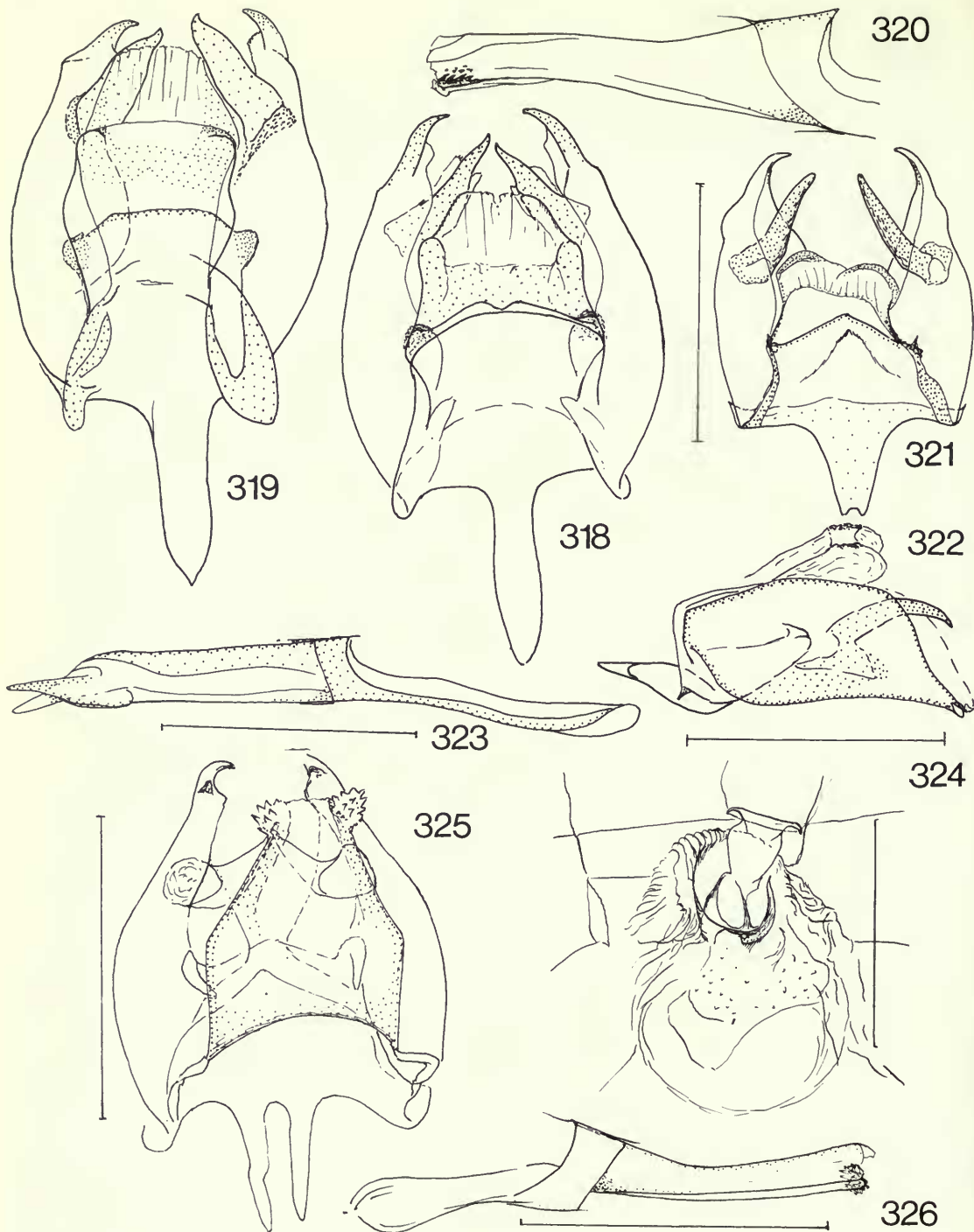
Figs 298–303 298–301, *Telenassa* species. (298) *T. catenaria*, ♂ genitalia (excluding tegumen), W. Colombia, g/s 2757; (299) *T. delphia*, ♂ genitalia, dorsal view, Colombia, g/s 812; (300) *T. sepulta*, ♂ genitalia, dorsal view, Peru, g/s 898; (301) same, penis, lateral view, Peru, g/s 898. 302, 303, *Ortilia* species. (302) *O. liriopae*, ♂ genitalia, dorsal view, Guyana, g/s 1559; (303) same, penis, lateral view, Brazil, Para, g/s 816. Scale = 1 mm.



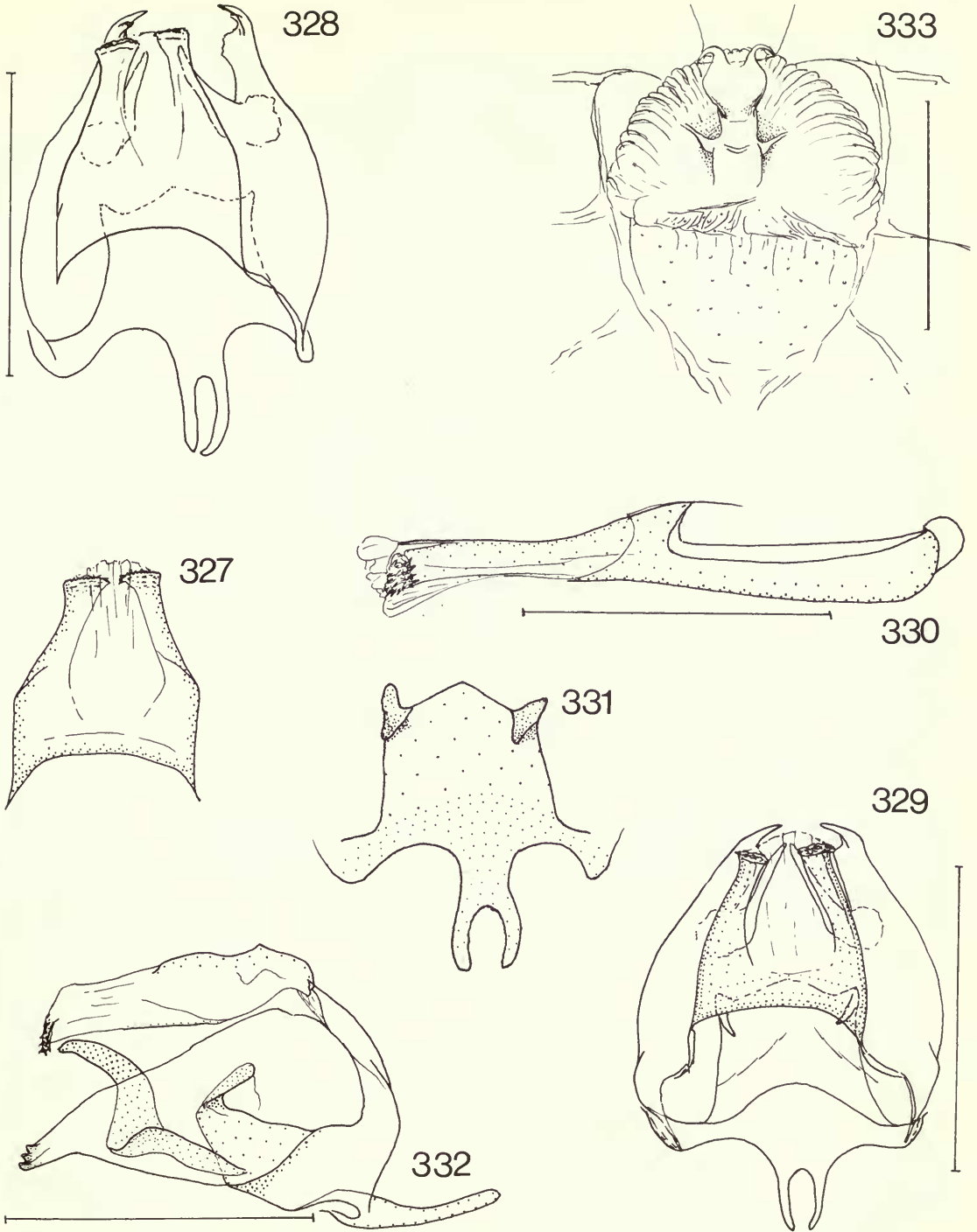
Figs 304–310 *Ortilia* species. (304) *O. liriopse*, ♀ genitalia, Lower Amazon, g/s 817; (305) *O. gentina*, ♂ genitalia, dorsal view, Bolivia, g/s 825; (306) same, ♂ genitalia, lateral view, Bolivia, g/s 1082; (307) *O. orthia*, ♂ genitalia, dorsal view, Castro, Parana, Brazil, g/s 797; (308) *O. orticas*, ♂ genitalia, dorsal view, Brazil, Parana, g/s 883; (309) same, ♀ genitalia. Brazil, g/s 1086; (310) *O. sejona*, ♂ genitalia, dorsal view, Brazil, Goias, Campinas, g/s 2800. Scale = 1 mm.



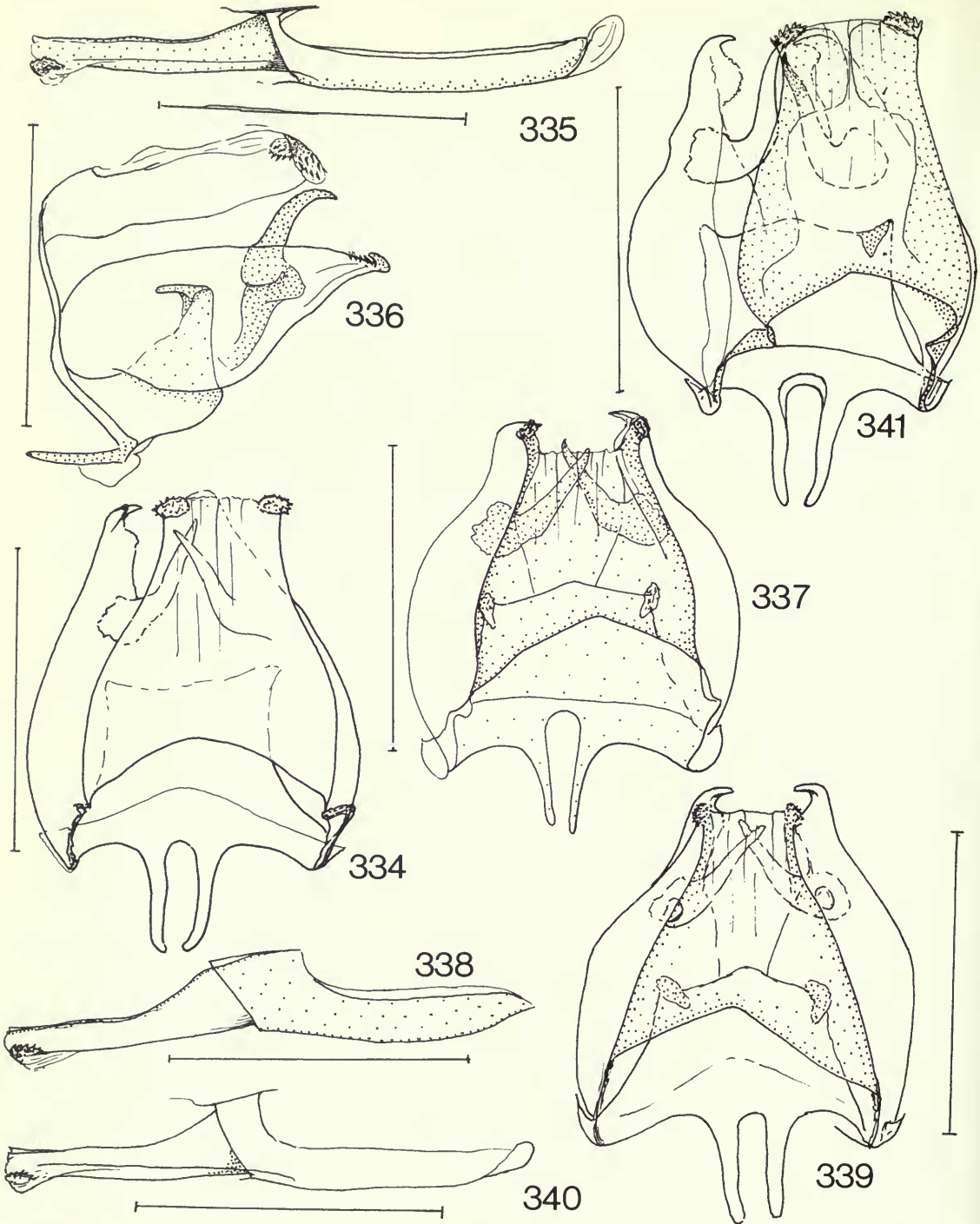
Figs 311–317 *Ortilia* species. (311) *O. velica*, ♂ genitalia, dorsal view, Brazil, São Paulo, g/s 800; (312) *O. velica durnfordi*, ♀ genitalia, dorsal view, g/s 1090; (313) *O. zamora*, ♂ genitalia, dorsal view, Rio de Janeiro, g/s 2753; (314) *O. dicoma*, ♂ genitalia, dorsal view, Brazil, g/s 834; (315) same, penis, lateral view, Brazil, g/s 834; (316) same, ♀ genitalia, dorsal view, Brazil, g/s 1089; (317) *O. polinella*, ♂ genitalia, dorsal view, Brazil, Minas Geraes, g/s 1084. Scale = 1 mm.



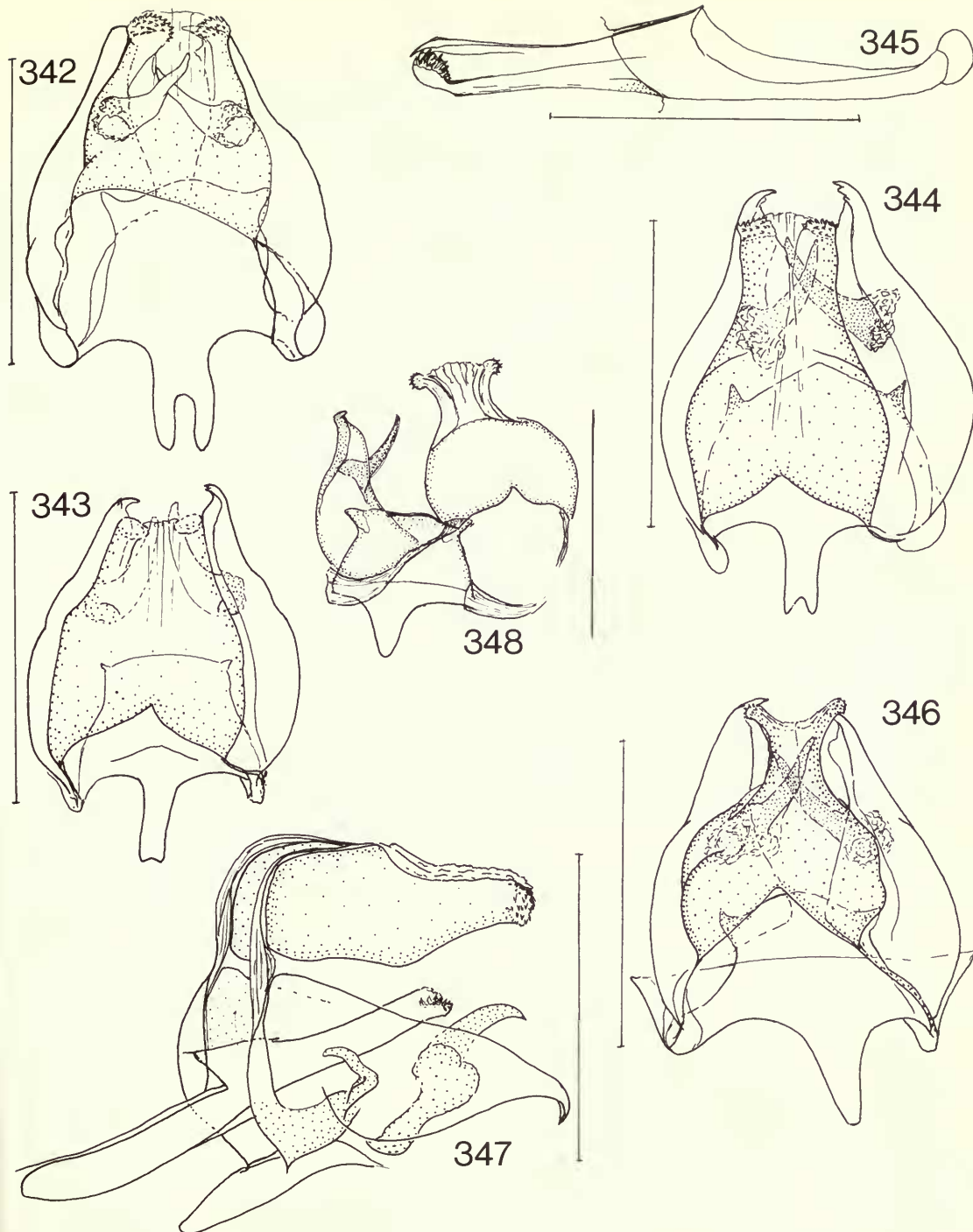
Figs 318–326 318–320, *Ortilia* species. (318) *O. ithra*, ♂ genitalia, dorsal view, Paraguay, g/s 853a; (319) same, ♂ genitalia, dorsal view, Brazil, Mato Grosso, g/s 853b; (320) same, penis, distal section, lateral view, Brazil, Mato Grosso, g/s 852. 321–324, *Tisona* species. (321) *T. saladillensis*, ♂ genitalia, dorsal view, Salta, g/s 878; (322) same, ♂ genitalia, lateral view, Salta, g/s 881; (323) same, penis, lateral view, Salta, g/s 878; (324) same, ♀ genitalia, Salta, g/s 1077. 325, 326, *Tegosa* species. (325) *T. claudina*, ♂ genitalia, dorsal view, Paraguay, g/s 135; (326) same, penis, lateral view, Brazil, Parana, g/s 136. Scale = 1 mm.



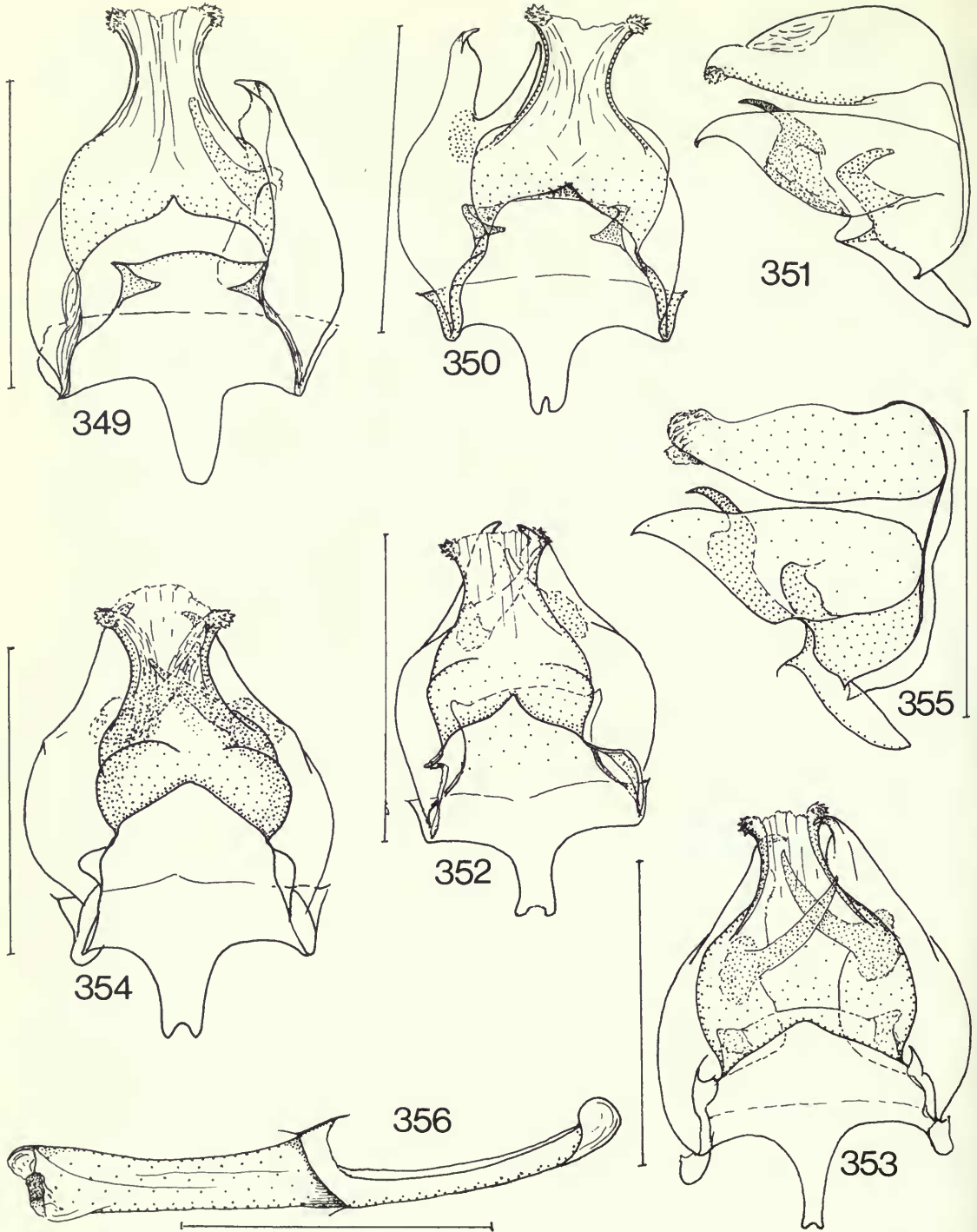
Figs 327–333 *Tegosa* species. (327) *T. similis*, tegumen + scaphial extension, 'Indiis', lectotype, g/s 1557; (328) same, ♂ genitalia, 'Indiis', lectotype, g/s 1557; (329) same, ♂ genitalia, Trinidad, g/s 893; (330) same, penis, lateral view, Brazil, g/s 2700; (331) same, saccus and tegumen + scaphial extension, Brazil, g/s 2700; (332) same, ♂ genitalia, lateral view, Brazil, Minas Geraes, g/s 2700; (333) same, ♀ genitalia, Brazil, g/s 1080. Scale = 1 mm.



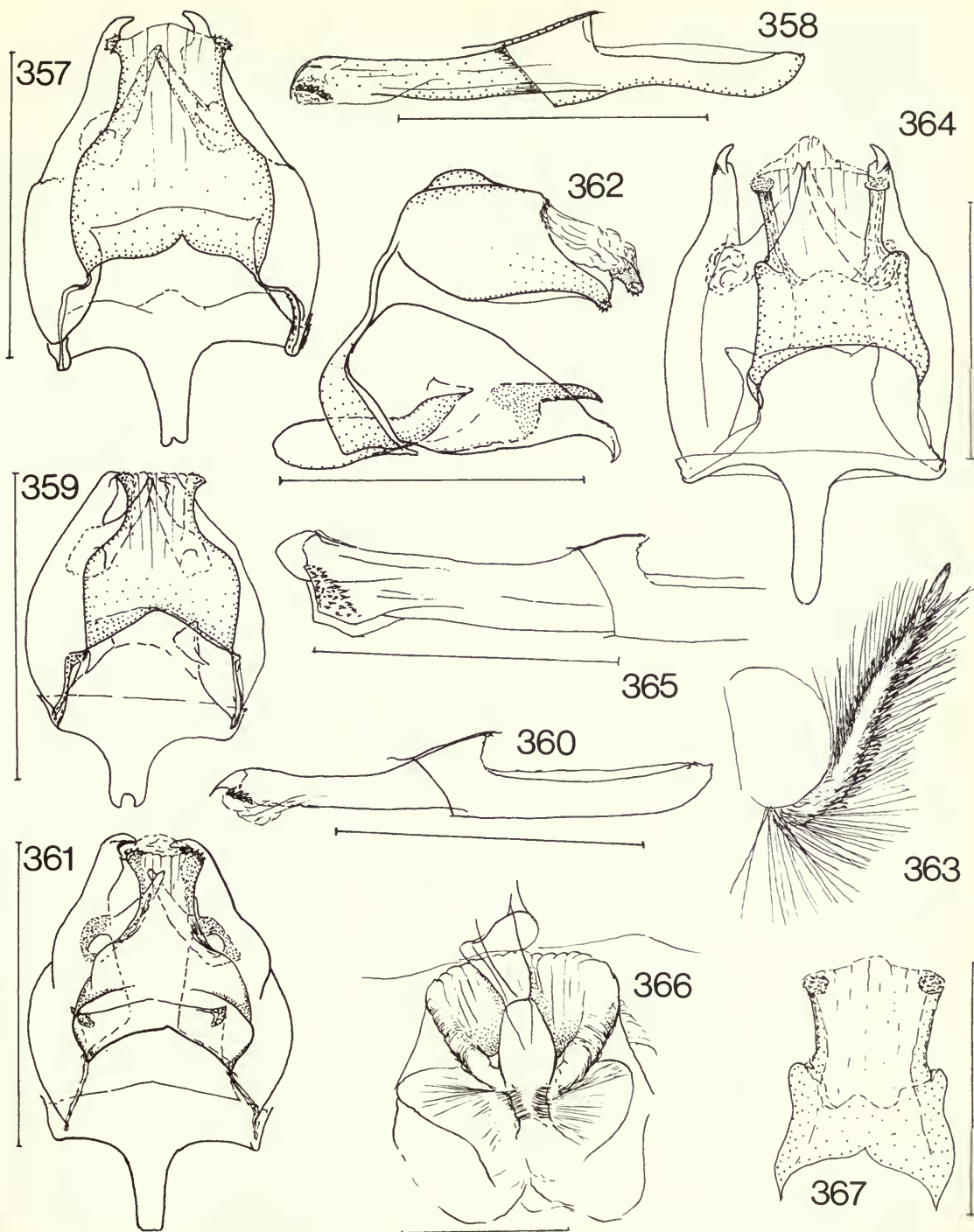
Figs 334–341 *Tegosa* species. (334) *T. orobia*, ♂ genitalia, Brazil, Castro, Parana, g/s 892; (335) same, penis, lateral view, Brazil, Castro, Parana, g/s 892; (336) same, ♂ genitalia, lateral view, g/s 1073; (337) *T. fragilis*, ♂ genitalia, dorsal view, 'Brazil', g/s 2595; (338) same, penis, lateral view, 'Brazil', g/s 2595; (339) *T. infrequens*, ♂ genitalia, dorsal view, Bolivia, g/s 2714; (340) same, penis, lateral view, Bolivia, g/s 2714; (341) *T. ursula*, ♂ genitalia, Argentina, Tucuman, g/s 888. Scale = 1 mm.



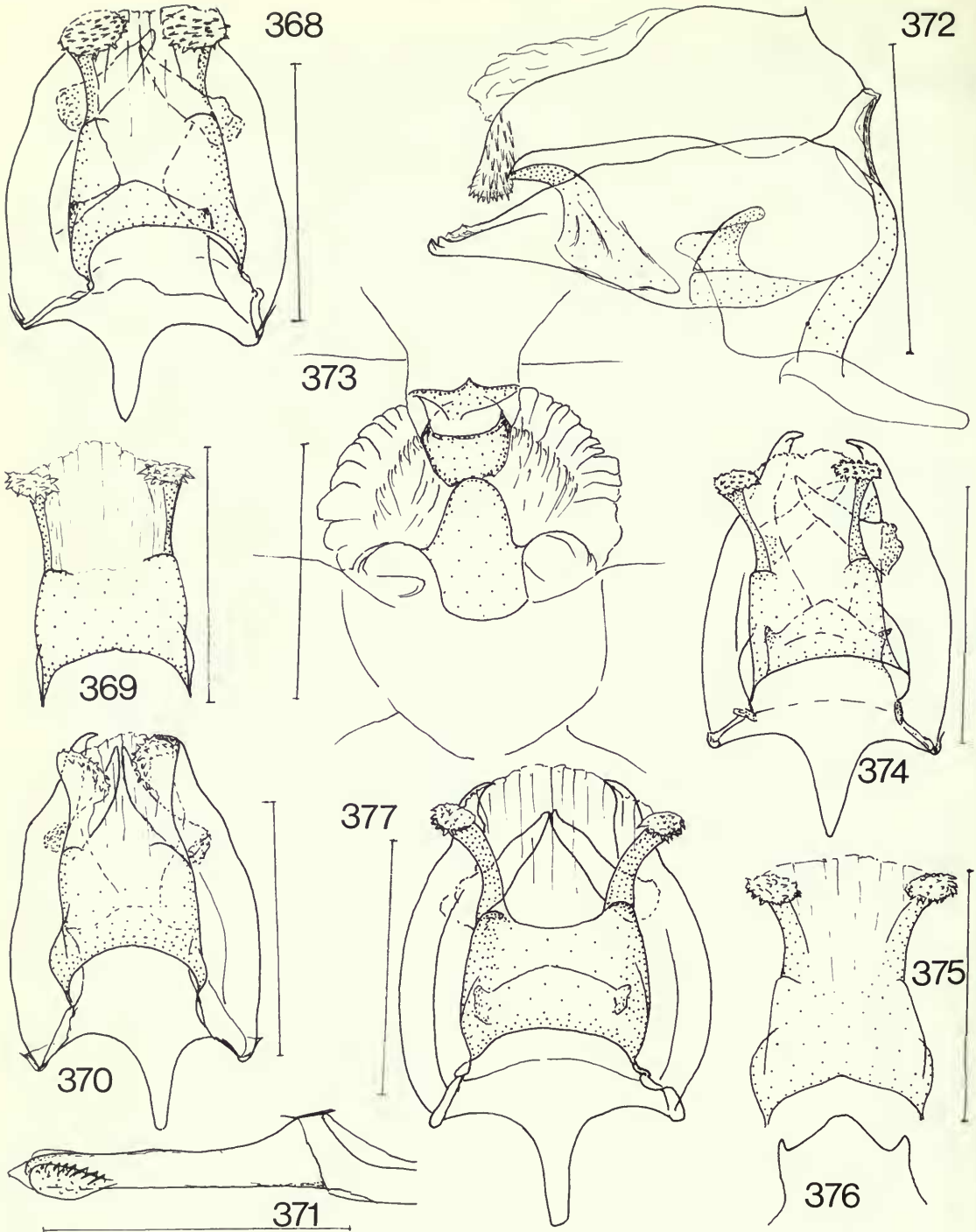
Figs 342–348 *Tegosa* species. (342) *T. flavida*, ♂ genitalia, dorsal view, Ecuador, g/s 2583; (343) *T. tissoides*, ♂ genitalia, Ecuador, g/s 1117; (344) *T. pastazena*, ♂ genitalia, Peru, Pozuzo, Huanuco, g/s 827; (345) same, penis, lateral view, Peru, Pozuzo, Huanuco, g/s 827; (346) *T. guatemalena*, ♂ genitalia, dorsal view, Guatemala, g/s 2590; (347) same, ♂ genitalia, lateral view, Mexico, Oaxaca, g/s 1193; (348) same, ♂ genitalia with tegumen displaced and right valve omitted, Mexico, g/s 125. Scale = 1 mm.



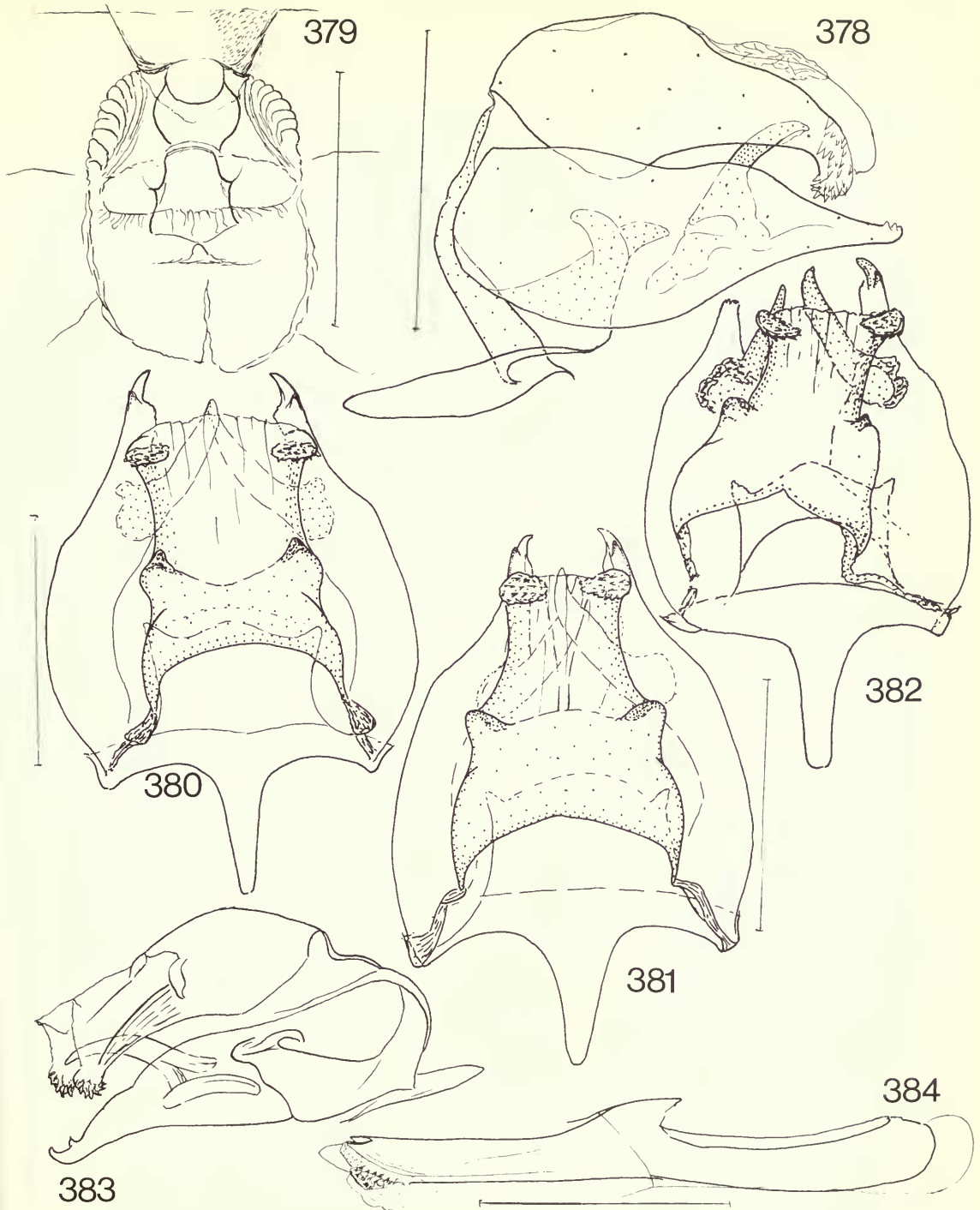
Figs 349–356 *Tegosa* species. (349) *T. anieta anieta*, ♂ genitalia, Panama, g/s 1020; (350) same, ♂ genitalia, Peru, g/s 1072; (351) same, ♂ genitalia, lateral view, Venezuela, Caracas, g/s 1202; (352) *T. anieta cluvia*, ♂ genitalia, Guatemala, g/s 1116; (353) *T. anieta luka*, ♂ genitalia, Mexico, g/s 2596; (354) same, ♂ genitalia, Ecuador, g/s 855; (355) *T. anieta anieta*, ♂ genitalia, lateral view, Venezuela, g/s 876; (356) same, penis, Panama, Onaca, g/s 839. Scale = 1 mm.



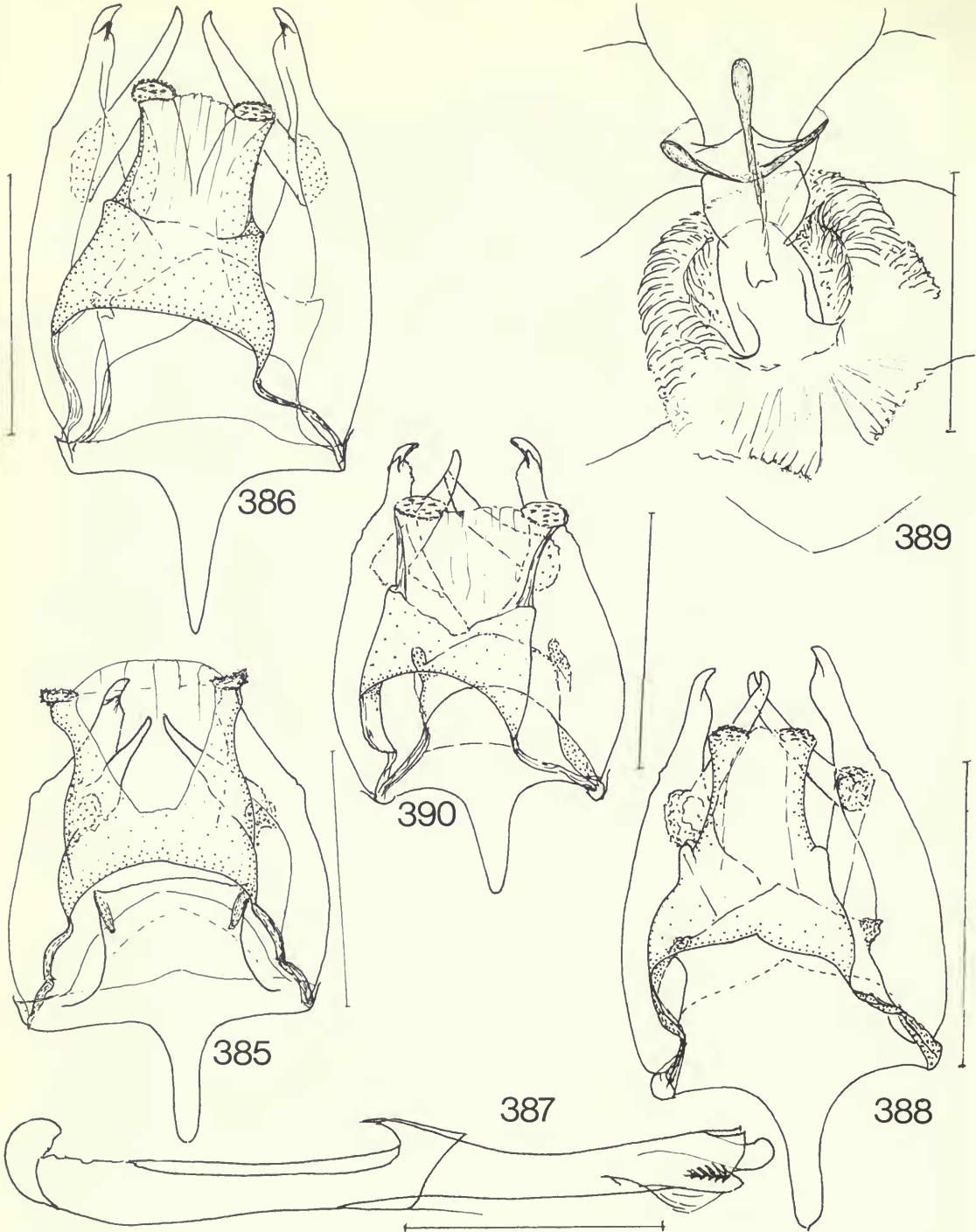
Figs 357–367 357–363, *Tegosa* species. (357) *T. nazaria*, ♂ genitalia, Colombia, g/s 877; (358) same, penis, lateral view, Colombia, g/s 877; (359) *T. etia*, ♂ genitalia, Guatemala, g/s 1125; (360) same, penis, lateral view, Guatemala, g/s 1125; (361) *T. nigrella*, ♂ genitalia, dorsal view, Costa Rica, g/s 2571; (362) same, ♂ genitalia, lateral view, Costa Rica, g/s 831; (363) same, side view of palpus. 364–367 *Eresia* species. (364) *E. clara*, ♂ genitalia, Venezuela, g/s 2559; (365) same, penis, Ecuador, g/s 2559 (2); (366) same, ♀ genitalia, Mexico, g/s 1061; (367) *E. clara* f. *reducta*, tegumen, g/s 2559 (1). Scale = 1 mm.



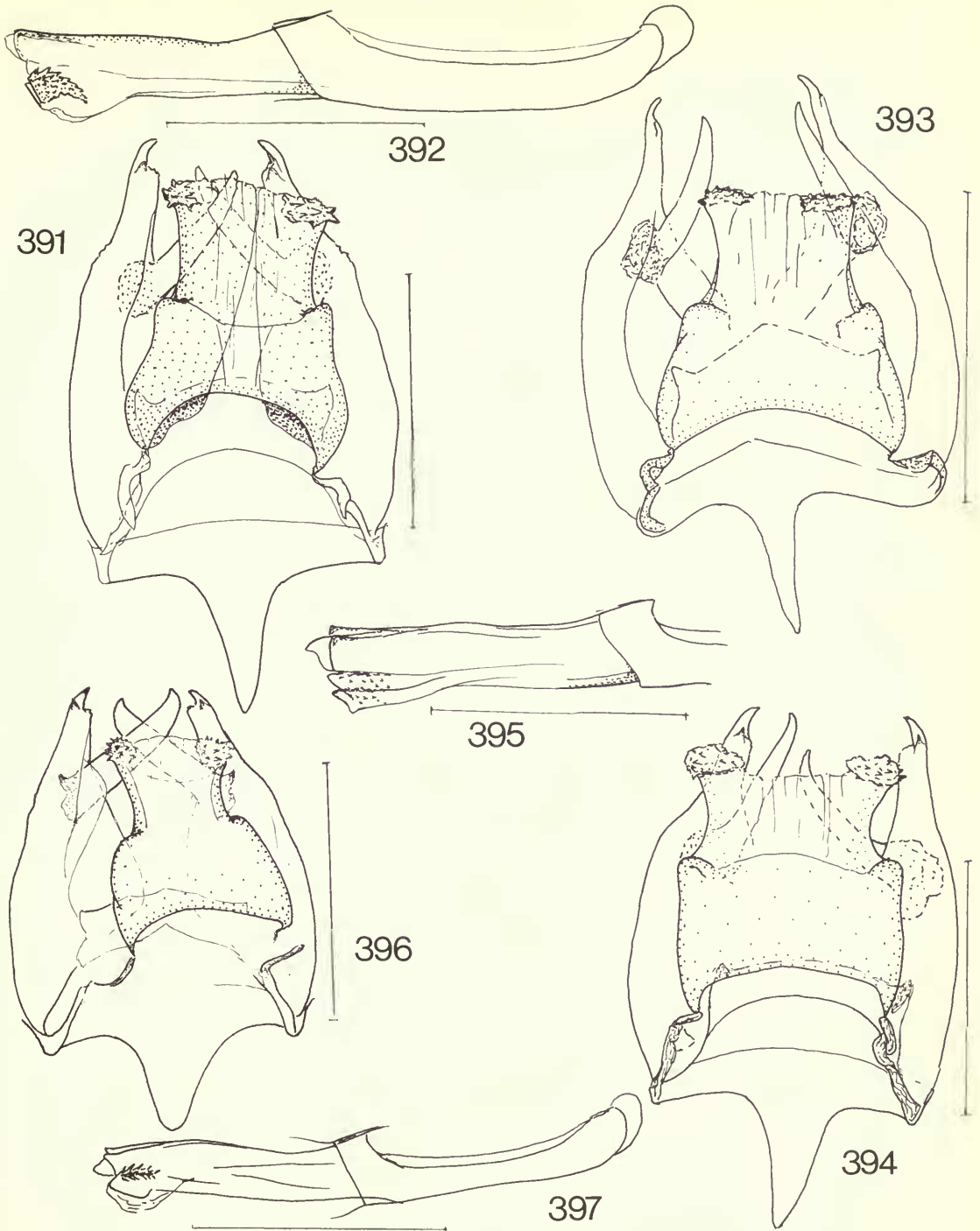
Figs 368–377 *Eresia* species. (368) *E. nauplius nauplius*, ♂ genitalia, dorsal view, Brazil, Obidos, g/s 2726; (369) same, tegumen, Brazil, Obidos, g/s 2742 (1); (370) same, ♂ genitalia, dorsal view, Guyana, g/s 636; (371) same, penis, distal section, lateral view, French Guiana, g/s 2584; (372) same, ♂ genitalia, lateral view, Guyana, g/s 2733; (373) same, ♀ genitalia, dorsal view, Brazil, Obidos, g/s 2734; (374) same, ♂ genitalia, dorsal view, 'Brazil', g/s 2736; (375) *E. plagiata*, dorsal structures, Brazil, Cucaru, g/s 2742 (2); (376) same, juxta, Brazil, Cucaru, g/s 2742(2); (377) same, ♂ genitalia, dorsal view, Peru, g/s 2560. Scale = 1 mm.



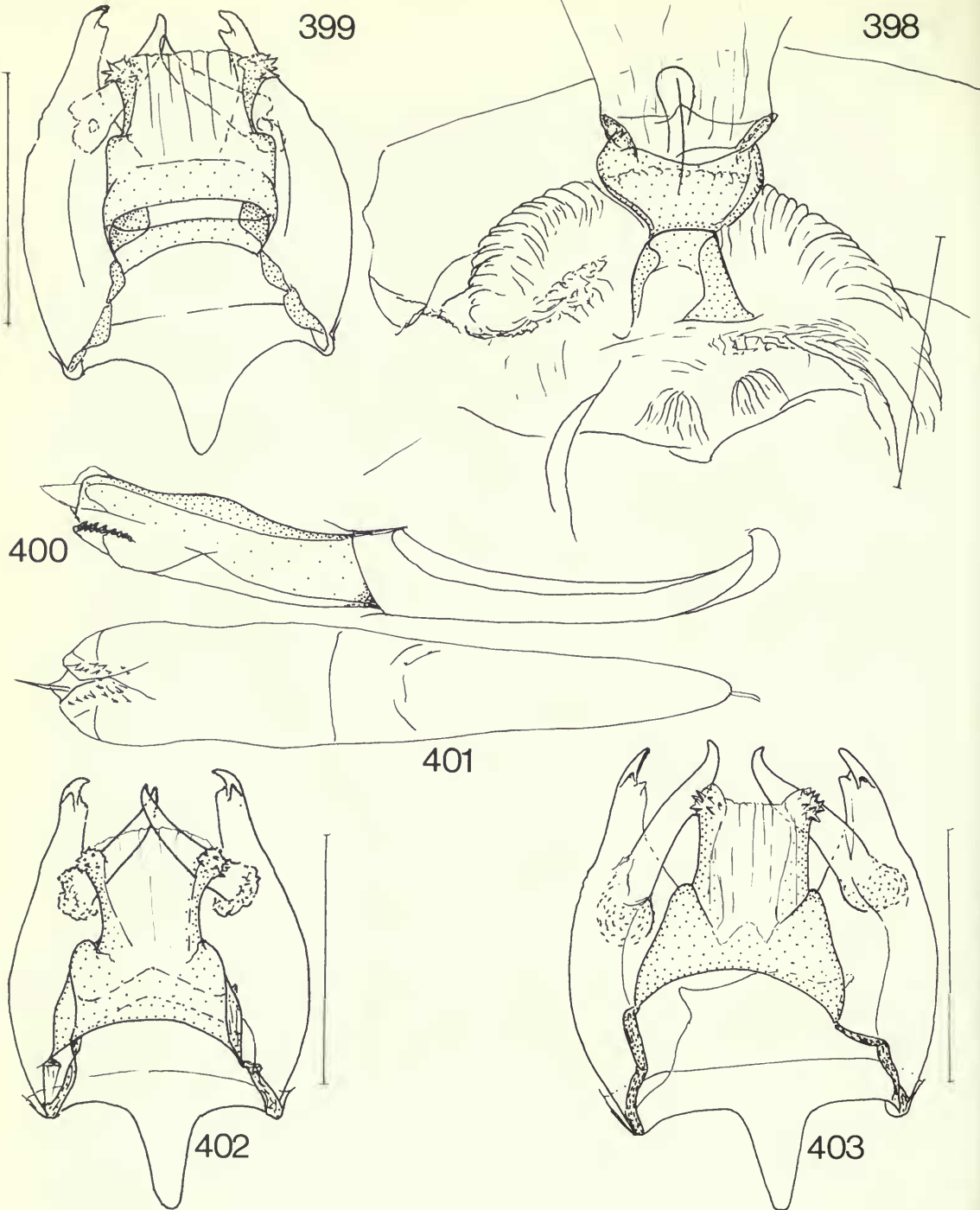
Figs 378–384 *Eresia* species. (378) *E. plagiata*. ♂ genitalia, lateral view, Brazil, Teffe, g/s 2737; (379) same, ♀ genitalia, Brazil, g/s 637; (380) *E. leititia ocellata (neptoides)*, ♂ genitalia, dorsal view, Peru, g/s 1244; (381) *E. leititia ocellata (nigra)*, ♂ genitalia, dorsal view, Peru, g/s 91; (382) *E. leititia leititia*, ♂ genitalia, dorsal view, Ecuador, g/s 2782; (383) *E. leititia ocellata*, ♂ genitalia, lateral view, Peru, g/s 186; (384) *E. leititia*, penis, lateral view, g/s 1242. Scale = 1 mm.



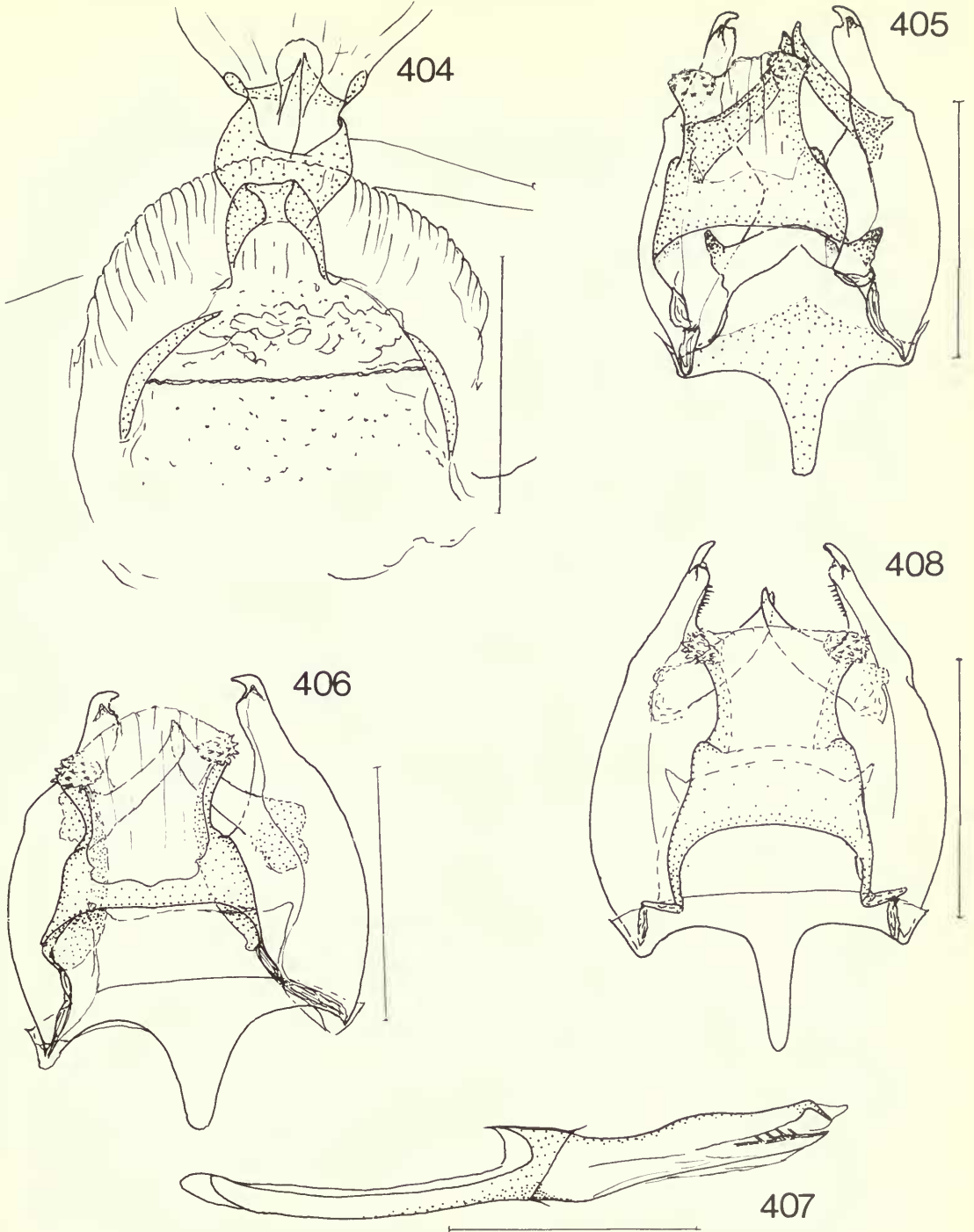
Figs 385–390 *Eresia* species. (385) *E. lansdorfi*, ♂ genitalia, dorsal view, Brazil, g/s 92; (386) *E. sestia*, ♂ genitalia, dorsal view, Ecuador, g/s 633; (387) same, penis lateral view, Ecuador, g/s 2713; (388) *E. coela*, ♂ genitalia, dorsal view, Costa Rica, g/s 2790; (389) same, ♀ genitalia, g/s 2740; (390) *E. oblita*, genitalia, dorsal view, Venezuela, g/s 2769. Scale = 1 mm.



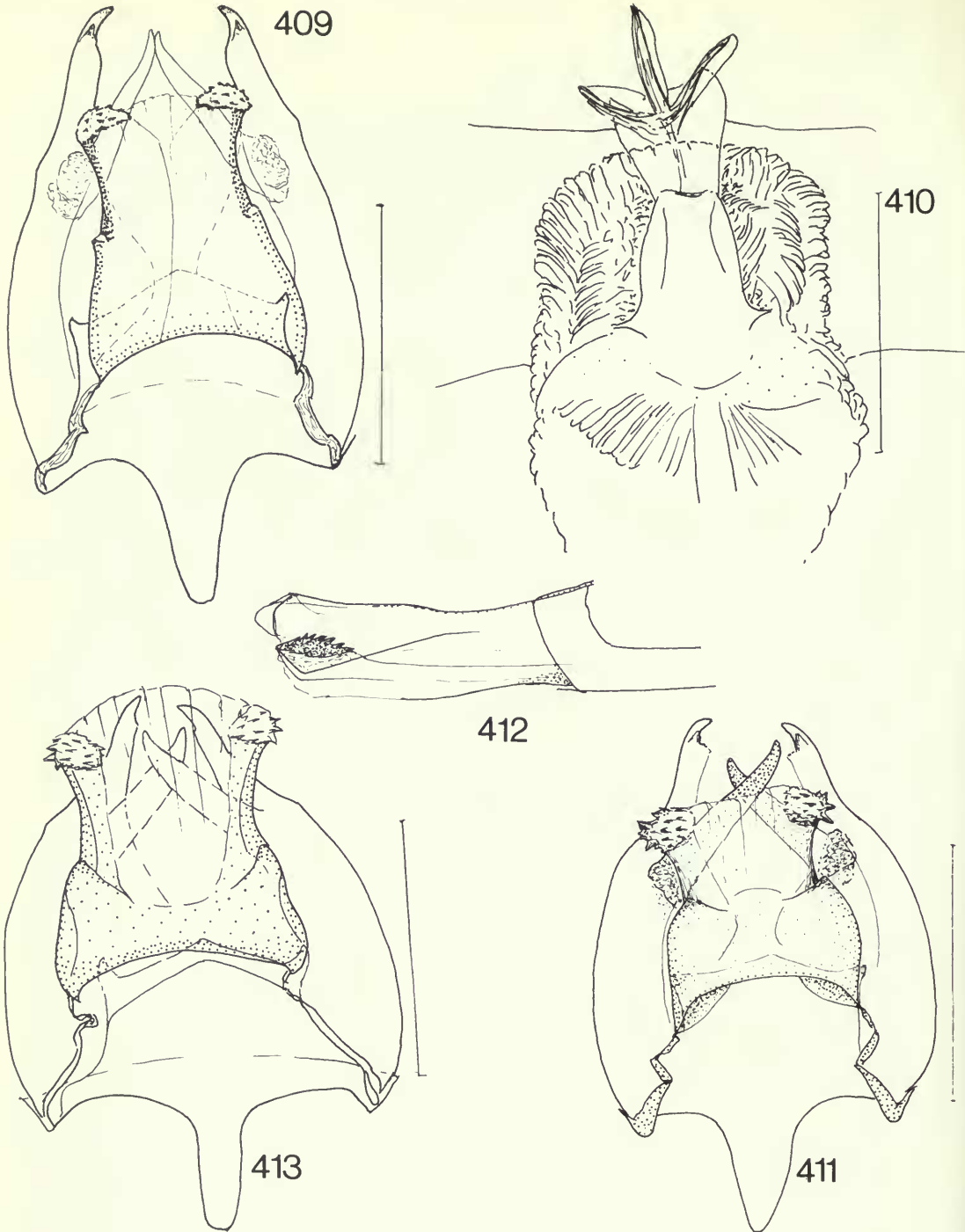
Figs 391–397 *Eresia* species. (391) *E. carne carne*, ♂ genitalia, dorsal view, Colombia, g/s 1241; (392) same, penis, lateral view, Colombia, g/s 1241; (393) same, ♂ genitalia, dorsal view, W. Colombia, g/s 2723 (2); (394) *E. polina*, ♂ genitalia, dorsal view, Colombia, g/s 89; (395) same, penis, lateral view, Colombia, g/s 89; (396) *E. alsina*, ♂ genitalia, dorsal view, Costa Rica, g/s 628; (397) same, penis, lateral view, Costa Rica, g/s 628. Scale = 1 mm.



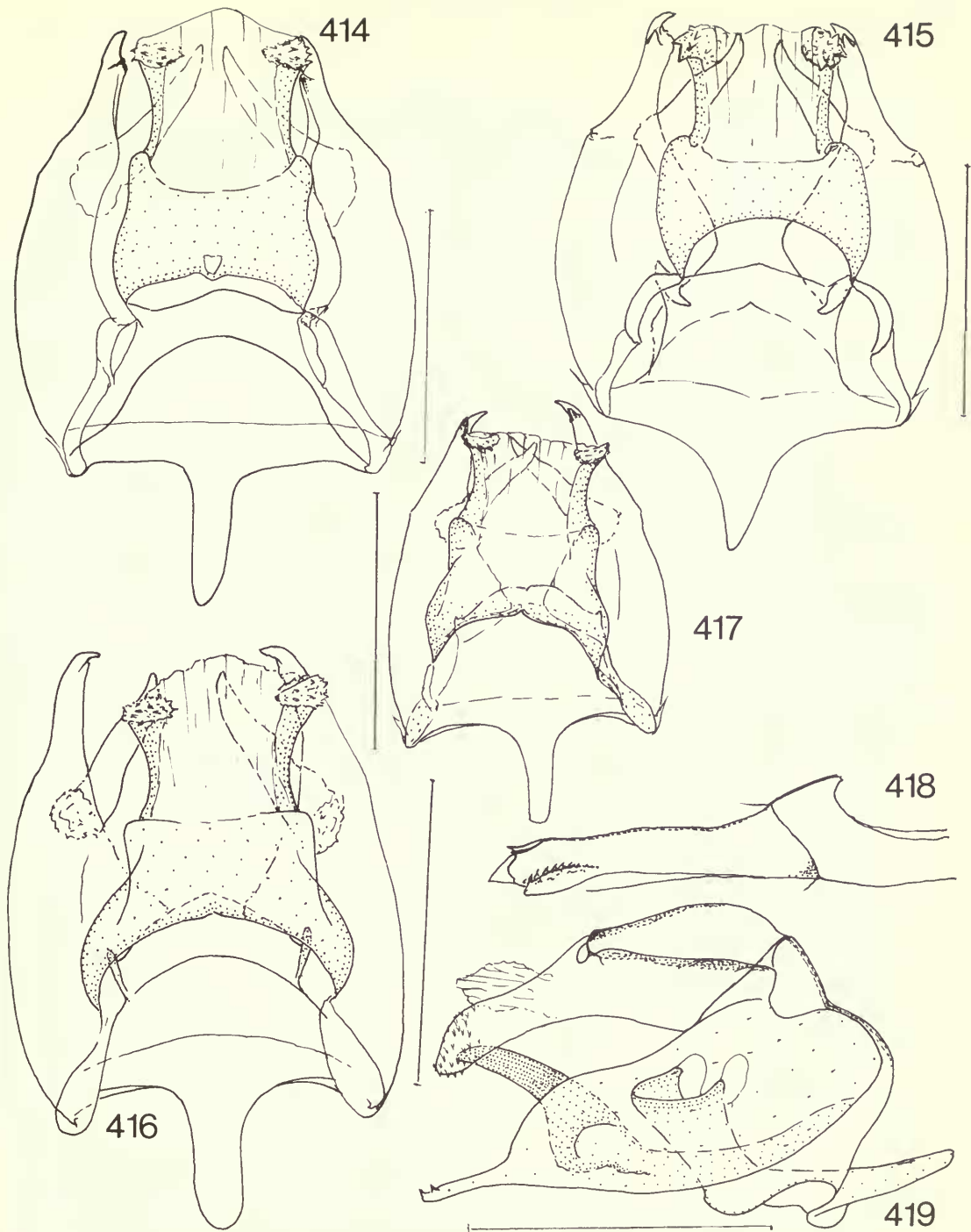
Figs 398–403 *Eresia* species. (398) *E. alsina*, ♀ genitalia, Nicaragua, g/s 629; (399) *E. cissia*, ♂ genitalia, dorsal view, W. Colombia, g/s 2771; (400) same, penis, lateral view, W. Colombia, g/s 2771; (401) same, penis, dorsal view, W. Colombia, g/s 2771; (402) *E. eutropia*, ♂ genitalia, dorsal view, W. Colombia, g/s 630; (403) *E. quintilla*, ♂ genitalia, dorsal view, Ecuador, g/s 631. Scale = 1 mm.



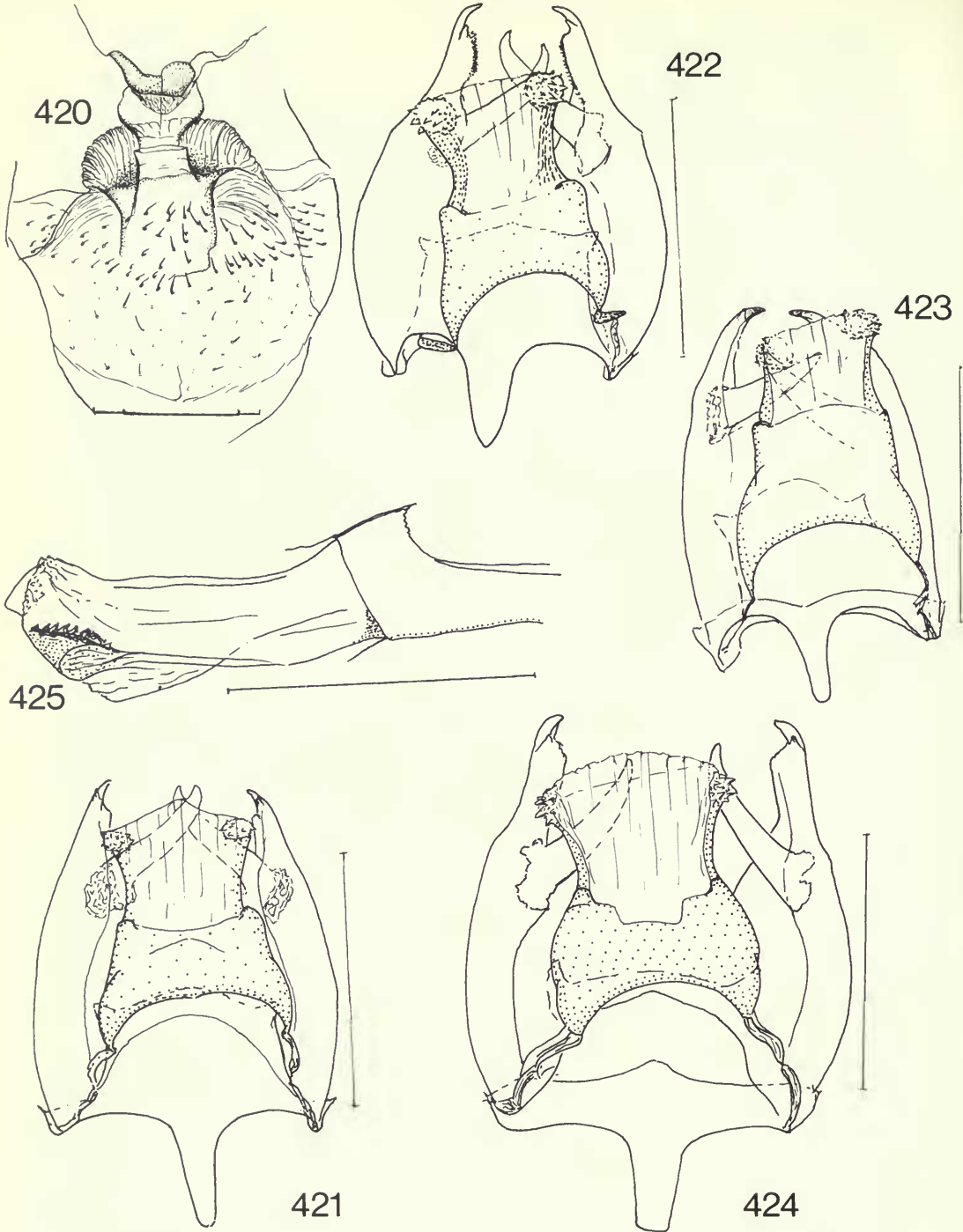
Figs 404–408 *Eresia* species. (404) *E. quintilla*, ♀ genitalia, Ecuador, g/s 632; (405) *E. sticta*, ♂ genitalia, dorsal view, Costa Rica, g/s 1023; (406) *E. ithomioides*, ♂ genitalia, dorsal view, Colombia, g/s 1240; (407) same, penis, lateral view, Colombia, g/s 1240; (408) *E. nigripennis*, ♂ genitalia, dorsal view, Costa Rica, g/s 896. Scale = 1 mm.



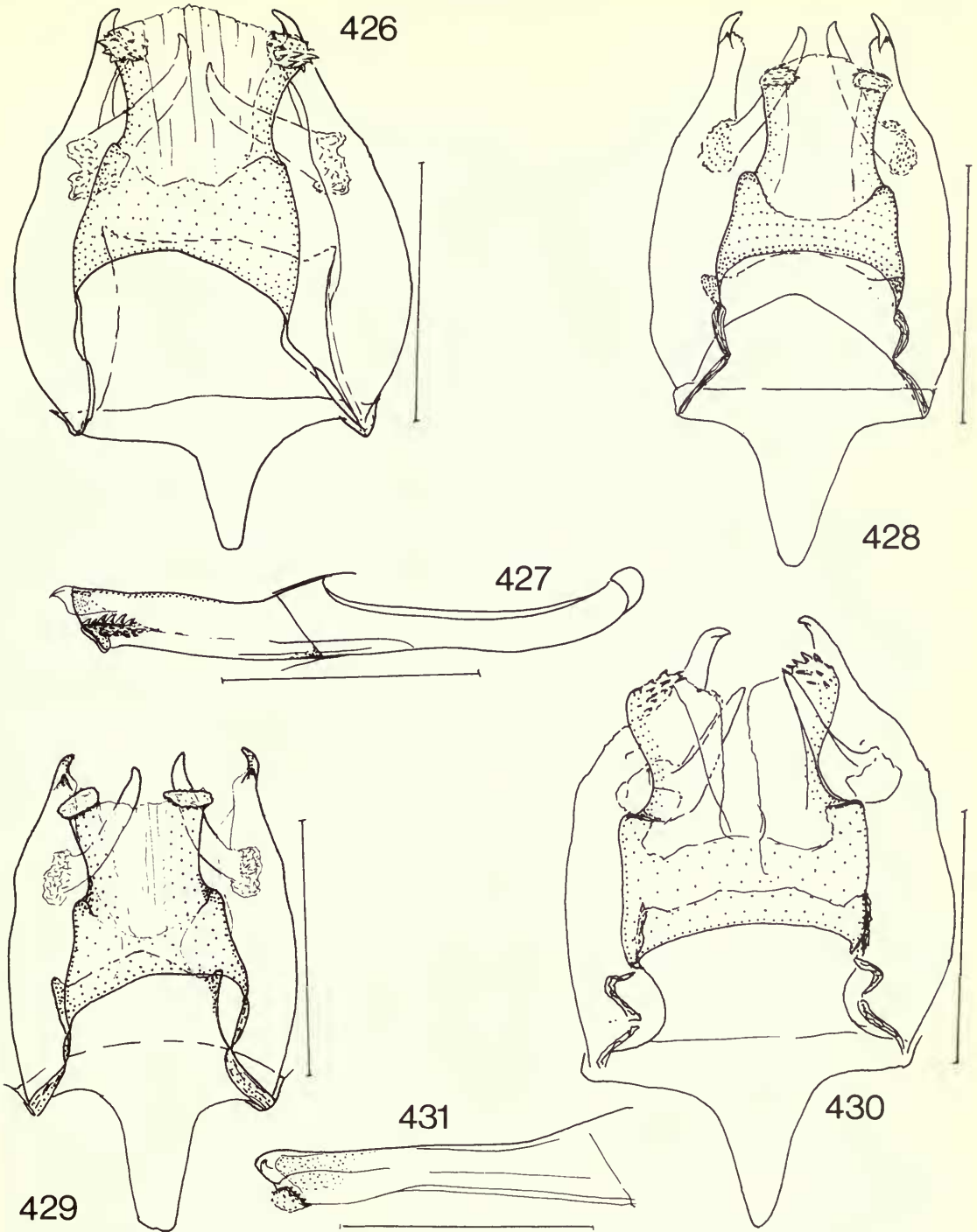
Figs 409–413 *Eresia* species. (409) *E. emerantia*, ♂ genitalia, dorsal view, Colombia, nr Larogosa, g/s 620; (410) same, ♀ genitalia, Colombia, g/s 2740; (411) *E. moesta*, ♂ genitalia, no locality [Ecuador?], g/s 2793; (412) same, penis, no locality [Ecuador?], g/s 2793; (413) *E. phaedima*, ♂ genitalia, Peru, g/s 639. Scale = 1 mm.



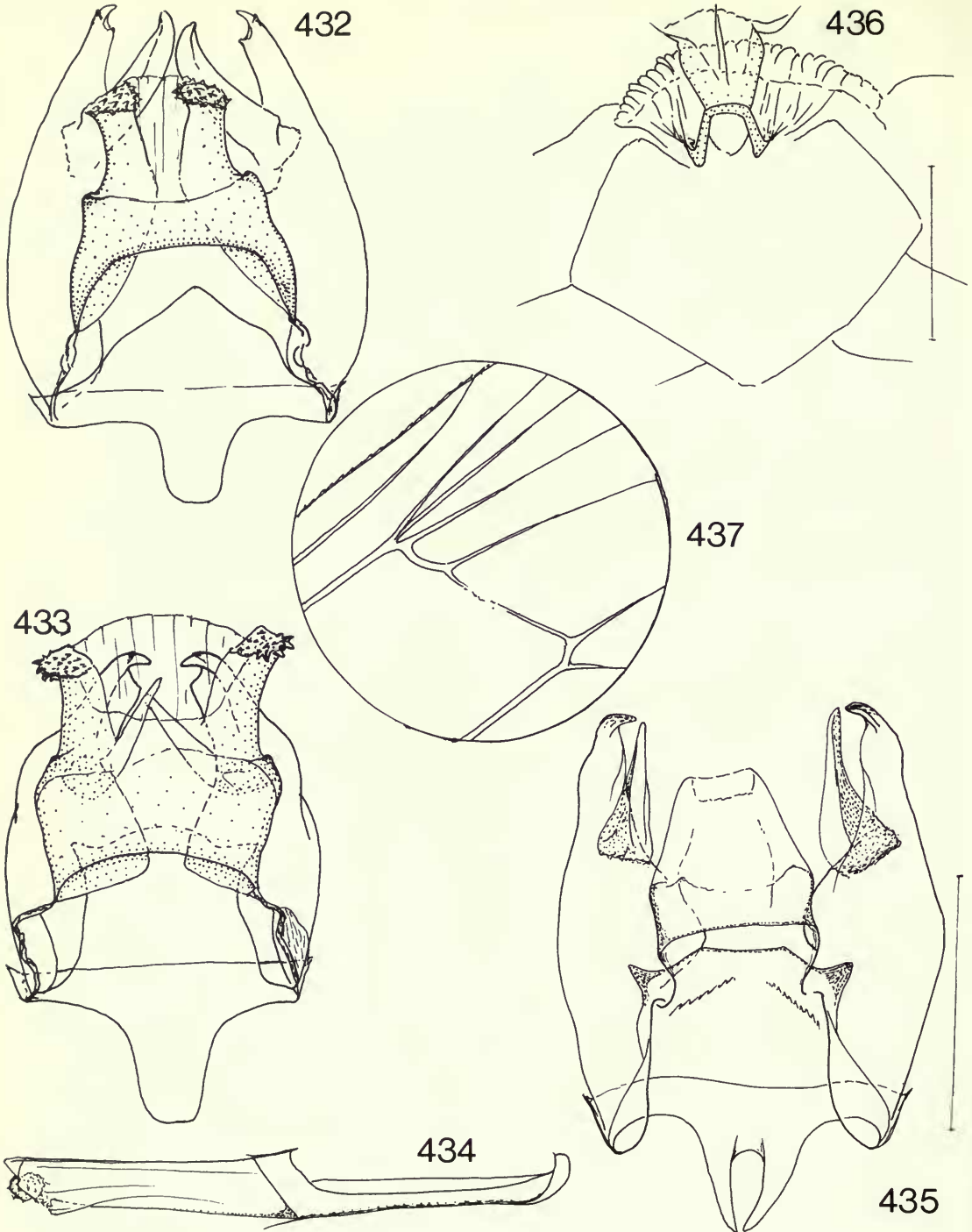
Figs 414–419 *Eresia* species. (414) *E. datis corybassa*, ♂ genitalia, dorsal view, Bolivia, g/s 622; (415) *E. margaretha*, ♂ genitalia, dorsal view, Colombia, g/s 2718; (416) *E. eunice*, ♂ genitalia, dorsal view, Peru, g/s 897; (417) *E. eunice esora*, ♂ genitalia, Brazil, São Paulo, g/s 2717; (418) *E. eunice eunice*, penis, lateral view, Brazil, g/s 1265; (419) same, ♂ genitalia, lateral view, Peru, g/s 2561. Scale = 1 mm.



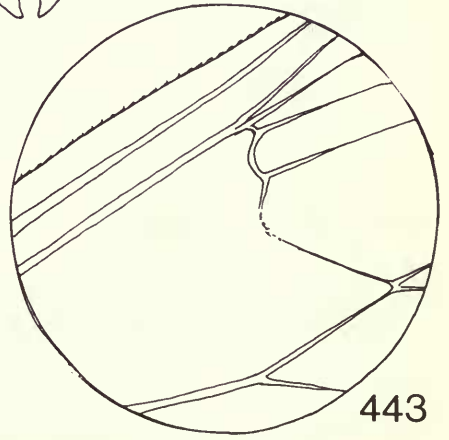
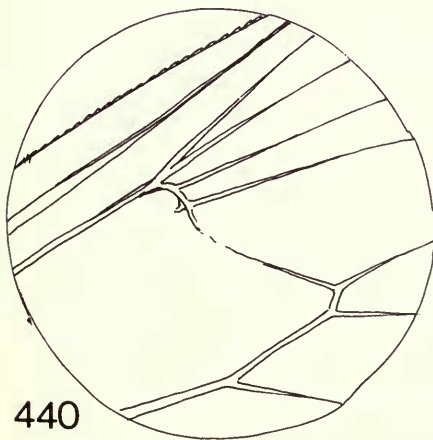
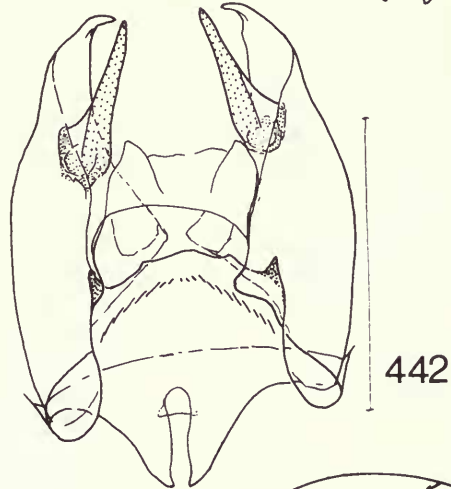
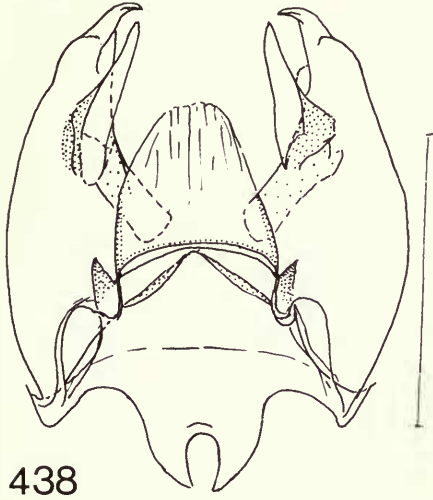
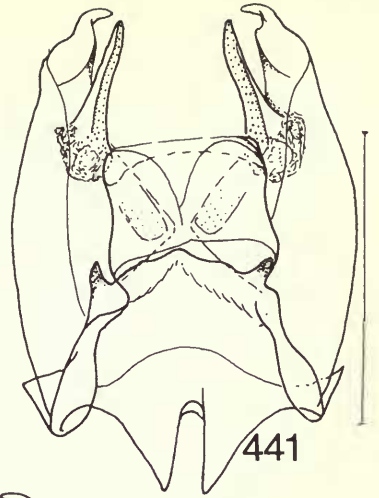
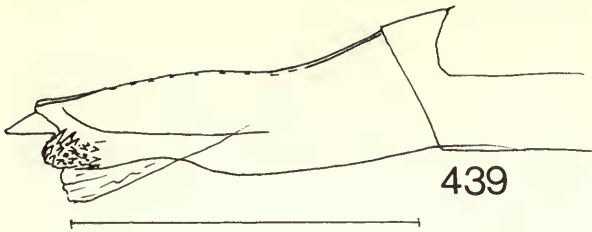
Figs 420–425 *Eresia* species. (420) *E. eunice eunice*, ♀ genitalia, Peru, g/s 1048; (421) *E. etesia*, ♂ genitalia, French Guiana, g/s 1026; (422) *E. casiphia*, ♂ genitalia, dorsal view, Ecuador, g/s 1027; (423) *E. mechanitis*, ♂ genitalia, dorsal view, Nicaragua, g/s 1243; (424) *E. pelonia*, ♂ genitalia, dorsal view, Brazil, g/s 92; (425) same, penis, lateral view, Ecuador, g/s 2558. Scale = 1 mm.



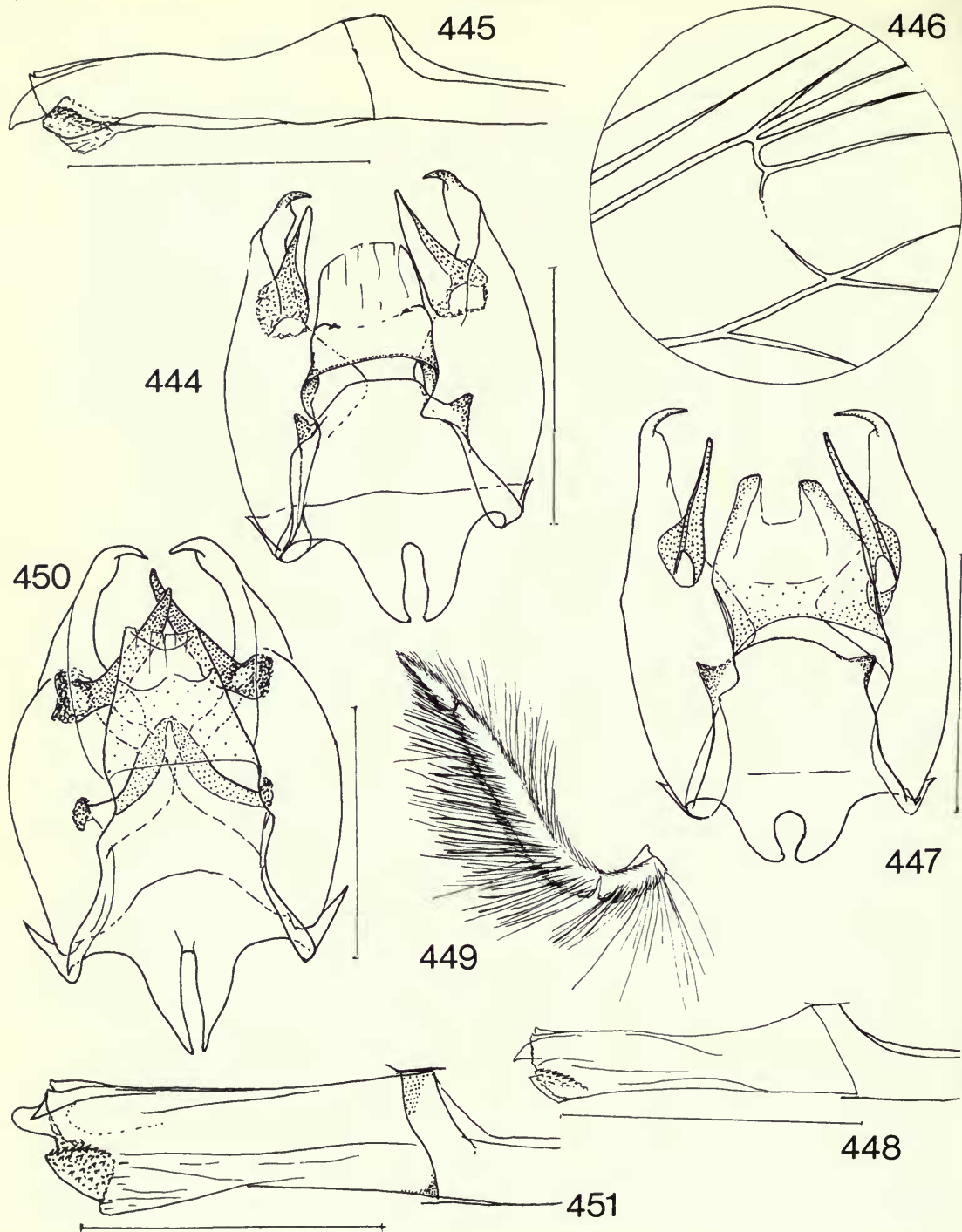
Figs 426–431 *Eresia* species. (426) *E. phillyra*, ♂ genitalia, dorsal view, Mexico, g/s 2569; (427) same, penis, lateral view, Mexico, g/s 1239; (428) *E. aveyrana aveyrana*, ♂ genitalia, French Guiana, g/s 635; (429) *E. perna*, ♂ genitalia, Brazil, g/s 2716; (430) *E. levina*, ♂ genitalia, Colombia, g/s 98; (431) same, penis lateral view, Colombia, g/s 98. Scale = 1 mm.



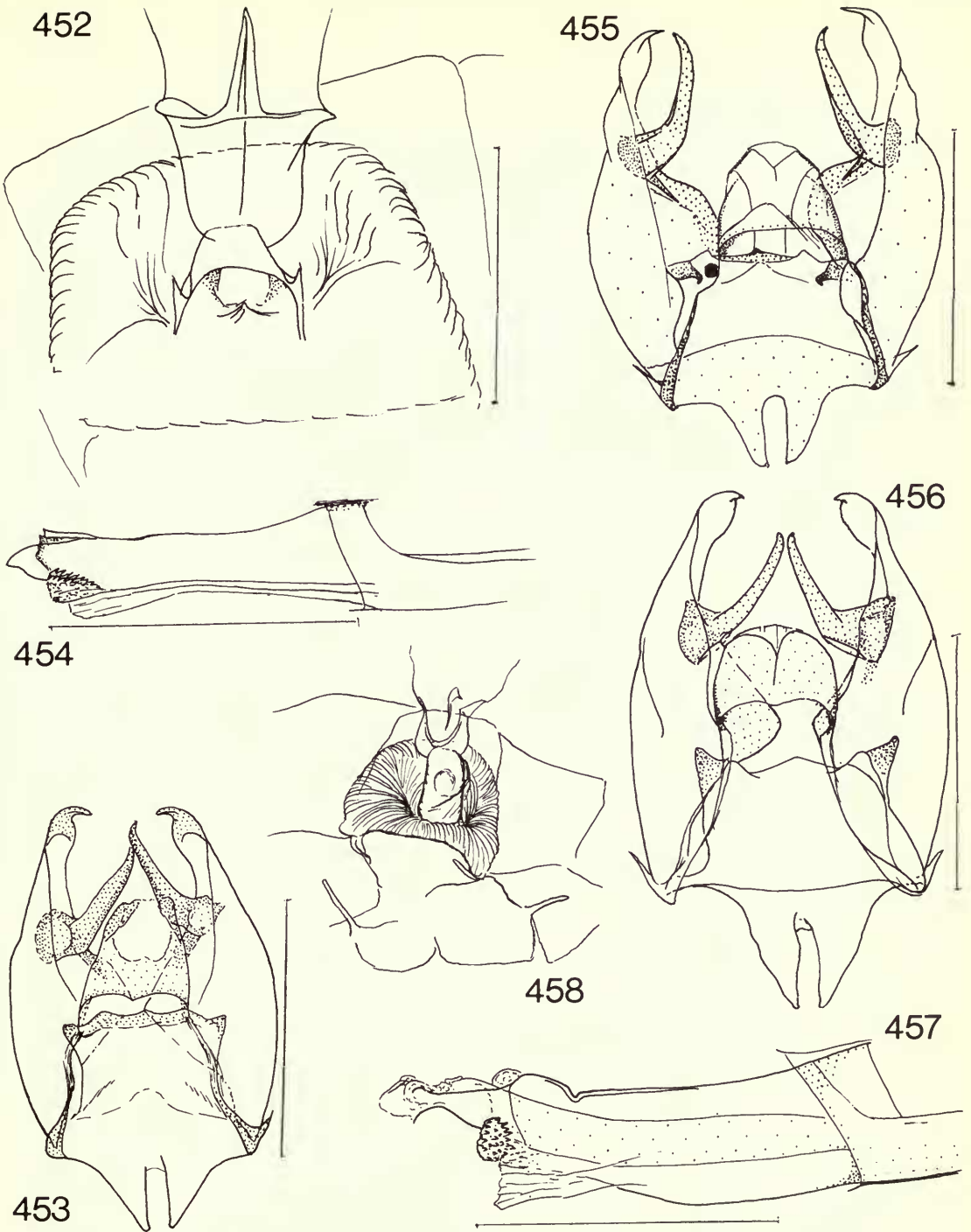
Figs 432–437 432–434, *Eresia* species. (432) *E. actinote*, ♂ genitalia, Peru, g/s 618; (433) *E. selene*, ♂ genitalia, Colombia, Manisales, g/s 832; (434) same, penis, Colombia, g/s 837. 435–437, *Castilla* species. (435) *C. castilla*, ♂ genitalia, dorsal view, Colombia, g/s 615; (436) same, ♀ genitalia, g/s 1164; (437) same, wing venation diagram. Scale = 1 mm.



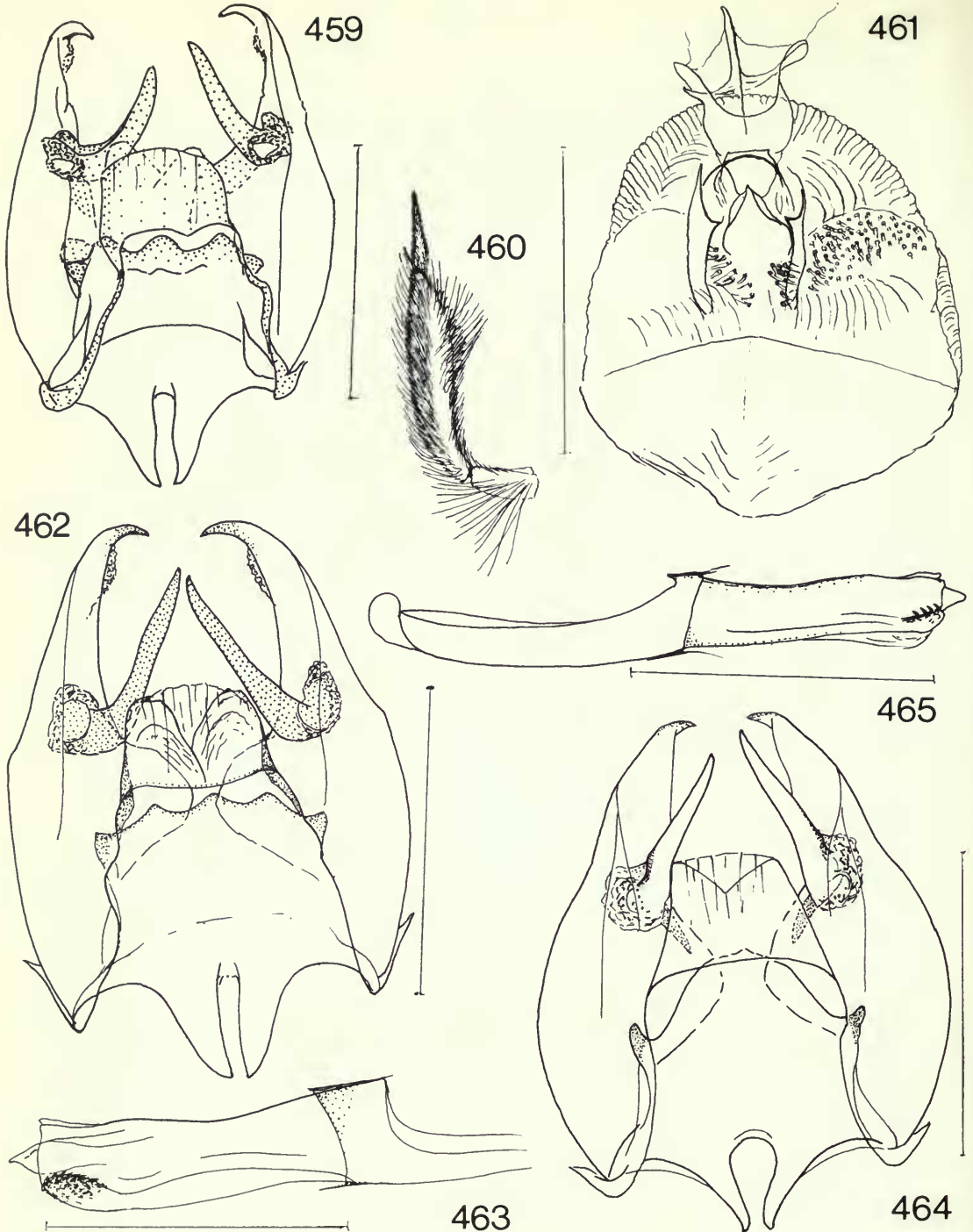
Figs 438–443 *Castilia* species. (438) *C. occidentalis*, ♂ genitalia, dorsal view, Ecuador, g/s 626; (439) same, penis, lateral view, Colombia, g/s 2715; (440) same, wing venation diagram, slide 1167; (441) *C. perilla*, ♂ genitalia, dorsal view, penis removed, Ecuador, g/s 627; (442) *C. perilla* f. *acraeina*, ♂ genitalia, dorsal view, penis removed, Brazil, upper Amazons, g/s 1058; (443) *C. perilla*, wing venation diagram, discoidal area. Scale = 1 mm.



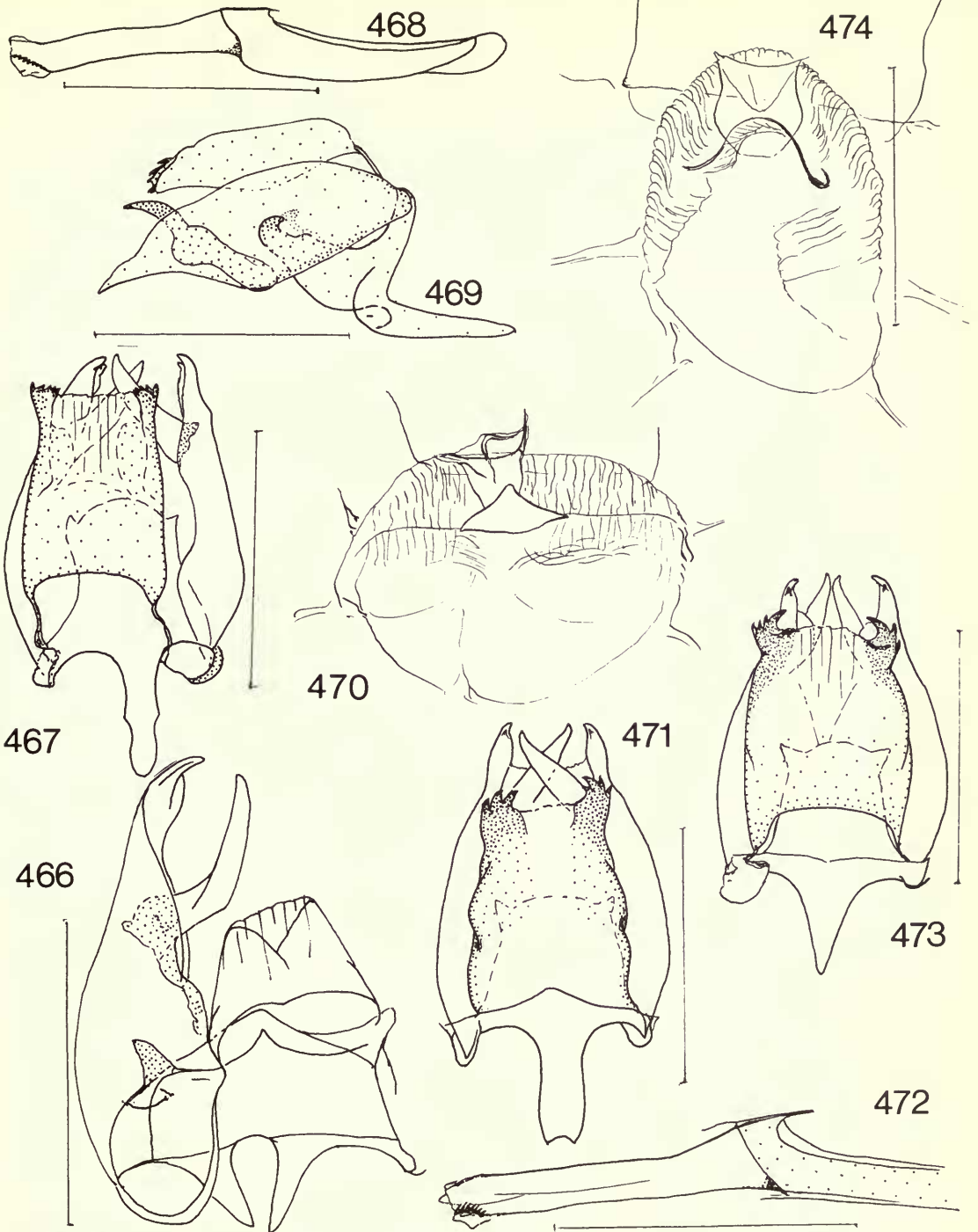
Figs 444–451 *Castilia* species. (444) *C. neria*, ♂ genitalia, dorsal view, Ecuador, g/s 619; (445) same, penis apex, lateral view, Ecuador, g/s 619; (446) same, wing venation diagram, discoidal area of forewing, slide 1169; (447) *C. northbrundii*, ♂ genitalia, dorsal view, Bolivia, g/s 611; (448) same, penis apex, lateral view, Bolivia, g/s 611; (449) same, palpus; (450) *C. eranites*, ♂ genitalia, dorsal view, Colombia, g/s 2587; (451) same, penis, lateral view, Colombia, g/s 2587. Scale = 1 mm.



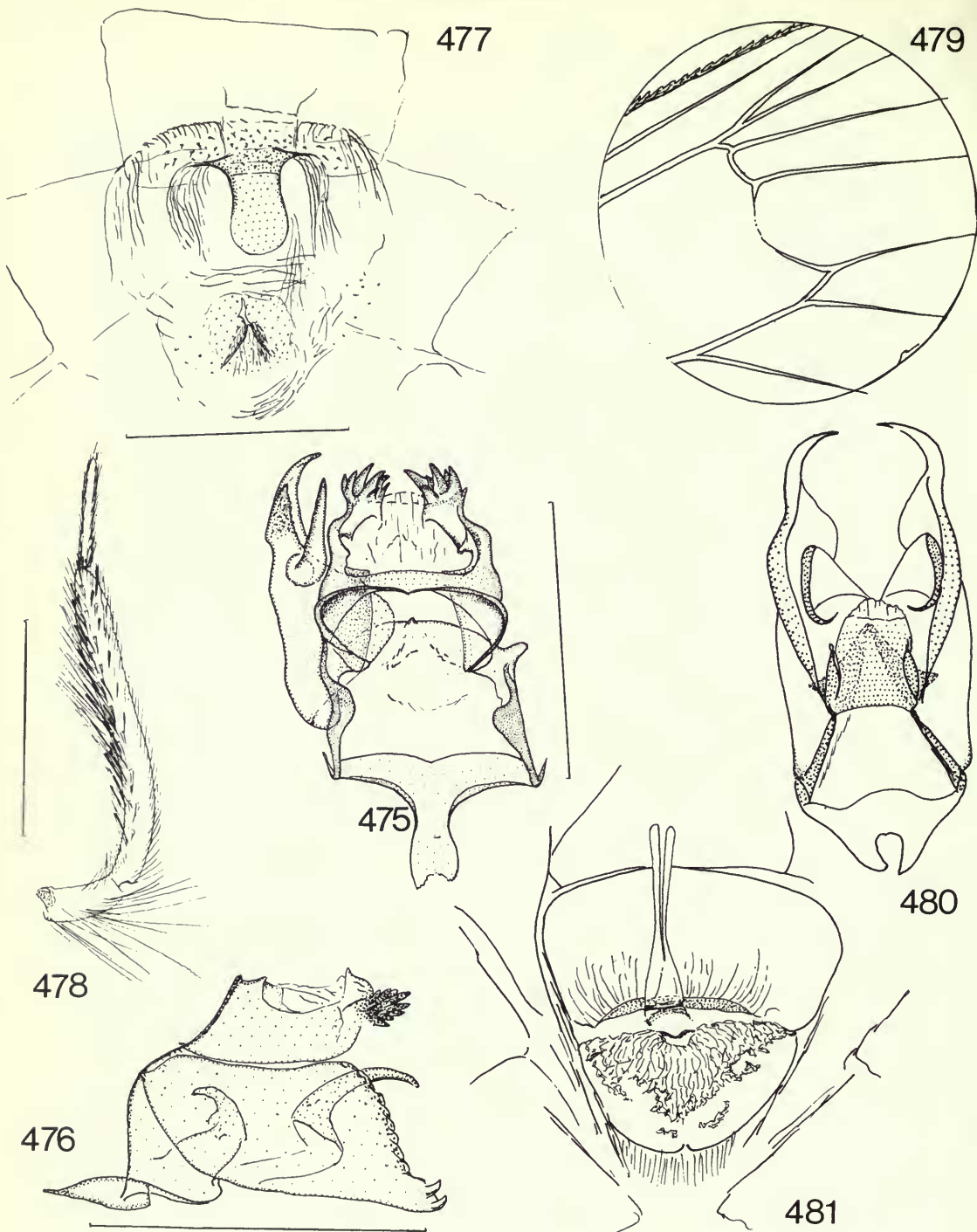
Figs 452-458 *Castilia* species. (452) *C. eranites*, ♀ genitalia, Colombia, g/s 1065; (453) *C. fulgora*, ♂ genitalia, dorsal view, Costa Rica, g/s 1021; (454) same, penis apex, lateral view, Costa Rica, g/s 1021; (455) *C. fausta*, ♂ genitalia, dorsal view, Panama, g/s 1345; (456) *C. ofella*, ♂ genitalia, Colombia, g/s 2585; (457) same, penis, lateral view, Colombia, g/s 2585; (458) same, ♀ genitalia, g/s 1063. Scale = 1 mm.



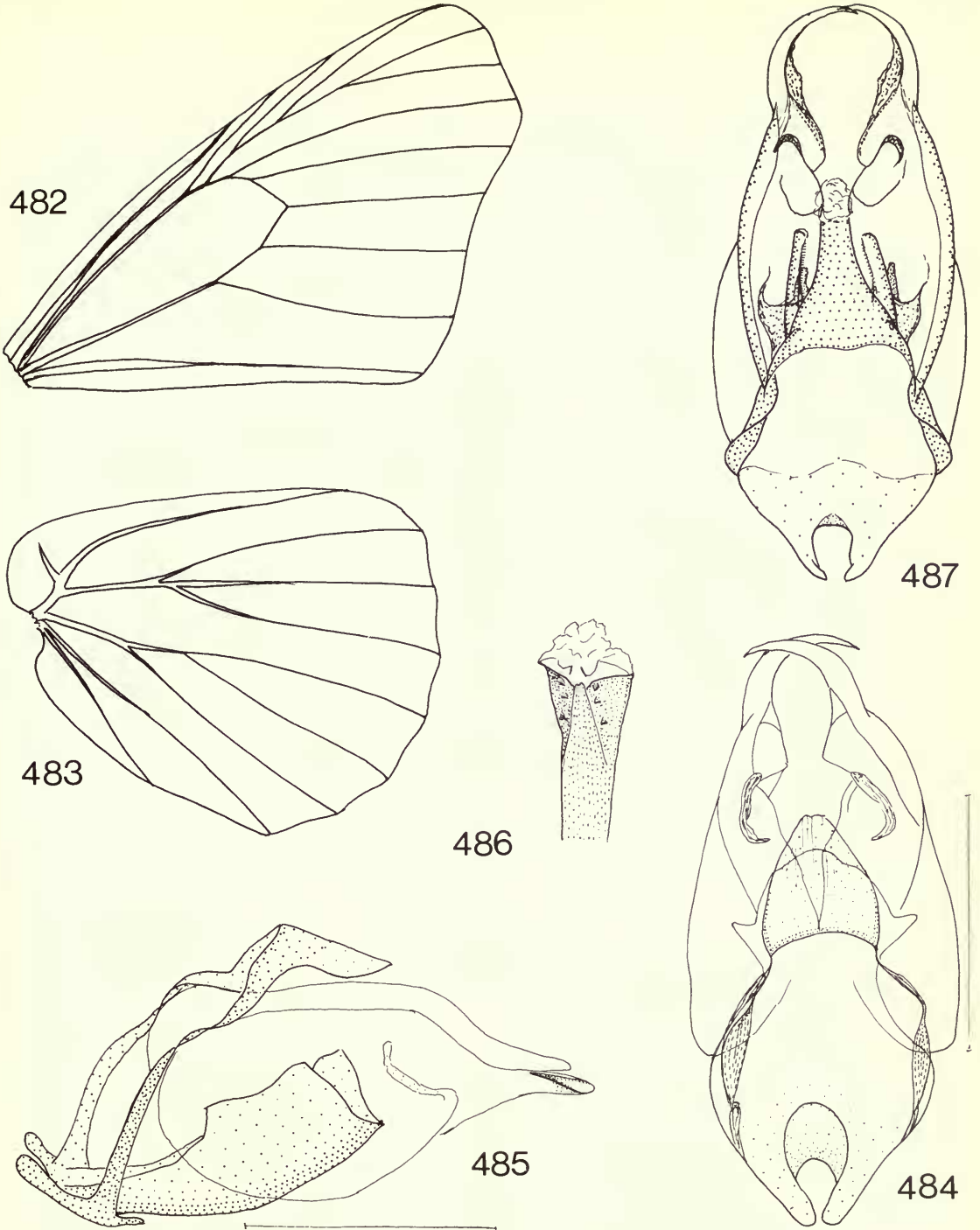
Figs 459–465 *Castilia* species. (459) *C. myia*, ♂ genitalia, dorsal view, Mexico, Teapa, g/s 2586; (460) same, palpus; (461) same, ♀ genitalia, Guatemala, g/s 1064; (462) *C. griseobasalis*, ♂ genitalia, dorsal view, Guatemala, Volcan Santa Maria, g/s 1038; (463) same, penis, lateral view, Guatemala, Volcan Santa Maria, g/s 1038; (464) *C. angusta*, ♂ genitalia, dorsal view, Peru, Chanchamayo, g/s 835; (465) same, penis, lateral view, Bolivia, g/s 2762. Scale = 1 mm.



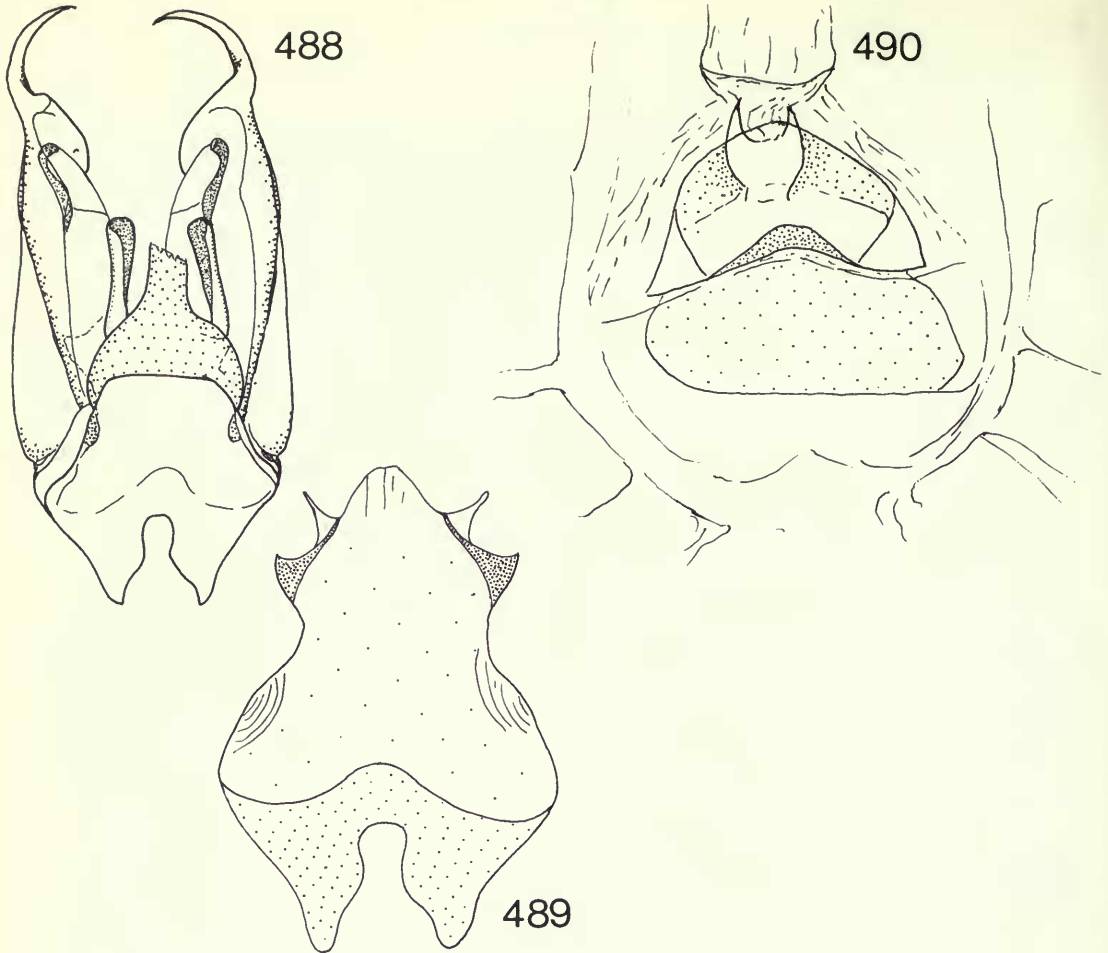
Figs 466–474 466, *Castilia angusta*, ♂ genitalia, oblique view, Bolivia, g/s 2762. 467–474, *Janatella* species. (467) *J. leucodesma*, ♂ genitalia, dorsal view, Trinidad, g/s 1349; (468) same, penis, lateral view, Trinidad, g/s 1349; (469) same, ♂ genitalia, lateral view, Venezuela, Cauca River, g/s 1348; (470) same, ♀ genitalia, Panama, g/s 1090; (471) *J. hera*, ♂ genitalia, dorsal view, Surinam, g/s 830; (472) same, distal section of penis, lateral view, Surinam, g/s 830; (473) *J. fellula*, ♂ genitalia, dorsal view, Colombia, g/s 101; (474) same, ♀ genitalia, Colombia, g/s 1088. Scale = 1 mm.



Figs 475-481 475-479, *Mazia* species. (475) *M. amazonica*, ♂ genitalia, dorsal view, 'Amazons', g/s 1365; (476) same, ♂ genitalia, lateral view, no locality, g/s 459; (477) same, ♀ genitalia, 'Amazon', g/s 1076; (478) same, palpus; (479) same, ♂ forewing venation diagram, discoidal area. 480, 481, *Gnathotriche* species. (480) *G. exclamationis*, ♂ genitalia, dorsal view, Colombia, g/s 82; (481) same, ♀ genitalia, dorsal view, 'Bogota', g/s 2611. Scale = 1 mm.



Figs 482–487 482–486, *Gnathotriche* species. (482) *G. exclamatoris*, forewing venation; (483) same, hindwing venation; (484) *G. sodalis*, ♂ genitalia, dorsal view, Colombia, g/s 2614; (485) same, ♂ genitalia, lateral view, Colombia, g/s 2814; (486) same, penis apex, dorsal view, Colombia, g/s 2814. 487, *Gnathotrusia mundina*, ♂ genitalia, dorsal view, Colombia, g/s 547. Scale = 1 mm.



Figs 488–490 488, 489, *Gnathotrusia* species. (488) *G. epione*, ♂ genitalia, dorsal view, Colombia, g/s 548; (489) same, saccus and juxta, dorsal view, showing conical posterior border and densely chitinized lingulae, Colombia, g/s 548. 490, *Ortilia ithra*, ♀ genitalia, g/s 1060.

Index

Principal references are in **bold**; invalid names are in *italics*.

abas 84, 110, **112**, 169
abasina 109
 aberrans 153
abrupta 114
 abyssinica 166
 acastus 167
 acesas 95, **101**, 169
aceta 115
acraea 150
acraeina Hewitson 153
acraeina Staudinger 166
 actinote 83, 130, **150**, 170
actinotina 154
adoxa 108

aequatorialis 104
 aetherie 166
 afghana 166
 agar 165
 ala 166
 alatauca 165
albescens 124
 alceta **96**, 168
alethes 96
 alexandrina 165
 alexon 95, **100**, 168
alma 150
 alsina 130, **137**, 138, 170
 amator **97**, 168

- amazonica* 159, 170
ambigua 165
ambrisia 166
amoenides 153
amoenua 166
angusta 152, 157, 170
ancia 165
anieta 122, 126, 169
annita 101
annulata 103, 168
anomala 141, 170
anomalus 167
Anthanassa 84, 94, 168
Antillea 167
apicalis 147
aquila 127
arachne 166
arcesia 166
archisilea 105
arctica 86
arduina 165
ardys 95, 98, 168
argentea 95, 102, 169
aricilla 153
arida 92
arizonensis 89
asteria 165
asteroidea 165
athene 166
athalia 165
Atlantea 170
atra 120
atronia 58, 102, 168
aurelia 165
aurinia 165
aurora 153
aveyrona 130, 149, 170
avinovi 165

balba 165
balbita 166
barnesi 89
batesii 65, 86, 167
bella 149
bellona 166
berenice 110, 111, 169
birivula 109
boucardi 92
brancodia 104
britomartis 165
brunhilda 145
burchelli 111, 168

calena 108
californica 167
callianira 162
callianthina 163
callonia 147
callonioides 147
camillus 87, 168
campestris 85, 87, 167

canace 91
carigia 99
carme 130, 135, 136, 169
carrera 97
casiphia 130, 147, 170
cassiopea 102
casta 166
castianira 101
Castilia 170
castilla 152, 170
catagraphus 109
catenaria 110, 114, 169
catula 108, 109, 168
celadussa 165
celemina 142
centralasiae 165
cerquita 142
chalcedona 165
chinantlensis 157, 170
chinchipensis, 160, 168
chitralensis 166
Chlosyne 166
chromis 102
Cinclidia 166
cincta 94, 100
cinxia 165
cissia 130, 137, 170
clara 129, 131, 169
clarior 121, 169
claudina 84, 121, 122, 169
clio 81, 131
cluvia 122, 126, 169
cocyta 85, 167
coela 135, 140, 169
collina 166
collina-group 166
collinsi 89
colon 165
conferta 104
confirmans 139
conflua 97
consulis 166
coracora 167
cornelia 144
cortes 95, 107, 168
corybassa 144, 170
crina 162
crithona 95, 104, 168
cynisca 167
cyno 103
cynthia 165
crucifera 153

Dagon 84, 108, 168
daguana 147
damaetas 167
datis 130, 143, 170
decorata 150
definita 167
deione 165

delphia 110, **115**, 169
derivata 143
 deserticola 166
desfontainii 165
diallus 102
 diamina 165
 dicoma 116, **119**, 169
dictynna 118
 dicoma 116, **119**, 169
 didyma 166
 didyma-group 166
 Didymaeformia 165
 didymina 166
 didymoides 166
dismorphina 142
dora 103
douglasi 111
 dracaena 95, **99**, 168
 draudti 167
 drymaea 95, **107**, 168
drypetis 145
 drusilla 94, 95, **96**, 168
drusinilla 111, 128
 dubia 95, **106**, 168
 durnfordi 116, **118**, 169
 dymas 167
 Dymasias 167

editha 165
edwardsi 90
 ehrenbergi 167
 elada 167
elaea 161
elaphiaea 112
 elaphina 110, **113**, 169
eleates 161
elenae 163
 elva 167
 emerantia **142**, 170
emissa 87
encina 136
 epione **163**, 167
epula 88
 eranites 152, **155**, 170
erebia 162
 Eresia 83, 84, **129**, 161, 169
 erodyle 167
 erysice 130, **146**, 170
 esora 130, **145**, 170
 estebana 131
 etesia **146**, 170
 etia 122, **127**, 151, 169
 euclea 85
 Eueides 83
 eucrasia 160
 eunice 130, **144**, 145, 170
 Euphydryas 165
 Euphydryini 165
 Eurodryas 165
 eutropia 130, **137**, 138, 170

evanescens 117
evanides 155
 exclamationis **161**, 167
 extensa 129, **132**, 169
extincta 109
ezorias 148

fallax 162
 fasciatus 167
fassli 142, 143
 fausta 152, **155**, 170
felderi 150
 fellula 84, **159**, 170
 ferghana 166
 ferghana-group 166
flavia 122
 flavida 122, **124**, 169
 flavocincta 110, **114**, 169
fenestrata 143
 fontus 108, **109**, 168
 fragilis 122, **124**, 169
 frisia 83, 95, **105**, 168
 fulgora 152, **155**, 170
 fulviplaga 95, **104**, 168
fulvocincta 109

gabbii 167
 gaudealis 167
 gaujoni 110, **114**, 169
geminia 113
 gentina **116**, 169
 gillettii 165
 gina 166
 gloriosa 167
 Gnathotriche **160**, 167
 Gnathotriche-group 167
 Gnathotrusia **162**, 167
 gorgone 166
 graphica **92**, 168
 griseobasalis **156**, 170
 guatemalena 122, 124, **125**, 170
guaya 156
gudruna 145

harperi 87
 harrisii 167
heliconiformis 142
heliconina 148
heliconoides 153
 hera 84, **158**, 170
 herlani **90**, 168
 hermas 95, **104**, 168
hewitsonii 148
 Higginsius **163**, 167
hilarina 153
 hippodrome 167
 hoffmanni 167
homogena 145
hopfferi 162
 Hypodryas 165

- ianthe* 158
iduna 165
ildica **142**, 143
immaculata 123
infernalis 166
infrequens 122, **124**, 169
intermedia Ménétrés 165
intermedia Röber 137
ithomioides 130, 137, 139, **140**, 141, 170
ithomiola 131
ithra 116, **120**, 169
- jacinthica* 134
jana 110, **111**, 169
janais 167
Janatella **157**, 170
jemezensis 91
jezabel 166
- klagesii* 145
kuchi 166
- lacinia* 167
laias **136**, 170
lansdorfi 130, **134**, 169
leanira 167
lelex **96**, 168
letitia 129, **133**, 169
leucodesma **158**, 170
leucophaea 133
levana 155
levina 131, **150**, 170
limbata 150
liriopae **116**, 169
lugubris 153
luka 122, **126**, 169
lukto 166
lunulata 166
lutescens 122, **128**
lycus 136
- macarandica* 166
macdunnoughi 87
macyi 89
magniplaga 143
malcolmi 167
manto 144
marcia 86
margaretha 130, **144**, 170
marianna 167
marina 167
mata 89
maturna 165
maya 91
Mazia 84, **159**, 170
mechanitis 130, **147**, 170
mejicana 155
melaina **139**, 170
melini 160
Melitaea 165
- Melitaeini* 165
melitaeoides 167
Mellicta 165
Mellicta-group 165
menetriesi 165
metharmeoides 160
mexicanus **89**, 168
microdryope 153
Microtia 167
mima 163
mimas **138**, 170
mimetica 166
mimicry 144
minerva 165
minima 109
minuta 166
mirabilis 160
miriam 167
mixta 166
moesta 130, **143**, 170
montanus 85, **88**, 168
morenus 108, **109**, 168
morpheus 85
mundina **162**, 167
murena 147, 148
myia 152, **156**, 170
mylitta **149**, 170
mylittus **88**, 168
- nana* 110, **113**, 169
narva 167
natalces 100
nauplius 129, 131, **132**, 169
nazaria 122, **127**, 169
nebrites 154
nebulosa 95, **101**, 168
neptoides 133
neria 152, **154**, 170
neumeogeni 167
nigra Giacomelli 120
nigra Rosenberg & Talbot 133
nigrella 122, **128**, 169
nigrina 94
nigripennis 130, **141**, 170
niveonotis 128
nivifera 139
nortbrundii 152, **154**, 170
notus 110, **113**, 169
nussia 110, **113**, 169
nycteis 166
- oblita* 130, **135**, 169
obscurata 102
occidentalis 152, **153**, 170
Occidryas 165
ocellata **133**, 169
ofella 152, **156**, 170
olivencia 131, **145**, 170
omosis 113
orientalis 165

- orobia 122, **123**, 169
 orthia 116, **117**, 169
 orticas 116, **117**, 169
 Ortilia **115**, 169
 orsa 88
 orseis **90**, 168
 otanes 95, **103**, 168
- packardii* 86
 palla 167
 pallas 165
 pallescens **91**, 168
 pallidus **89**, 168
pardalina 147
 parthenoides 165
pascoensis 86
pastazana 148
 pastazena **125**, 169
pedrona 93
PELLA 145
pellenea 153
 pelonia 130, **147**, 148, 170
 pelops 167
peraea 162
 perezi 170
 perilla 152, **153**, 170
 perna 130, 149, **150**, 170
 perseia 166
peruana 111
 phaedima **143**, 170
 phaeton 83, 165
 phaon 83, 85, **91**, 168
 phillyra 130, 142, **148**, 170
 phlegias 95, **99**, 168
 phoebe 166
 Phyciodes 79, 84, **85**, 167
 Phyciodini 81
 Phystis 84, **93**, 168
 pictus 85, **90**, 168
 plagiata 129, **133**, 169
platytenia 99
 plotina 165
 poecile 167
 poecilina 130, **139**, 170
 pola 166
 Poladryas 166
 polina 130, **136**, 170
 polinella 116, **119**, 169
poltis 117
polymnia 145
pratensis 87
pratti 94
prisca 143
 proclea 167
 pseudocolemina **141**, 170
 ptolyca 95, 96, **97**, 168
pulchella 86
pullopecta 113
punctata 105
- pusillus **108**, 168
- quintilla 130, **138**, 170
- reaghi* 86
 rebeli 165
reducta 131
 regama 165
 riina 160
 riobalensis 167
roeberi 117
rohweri 87
 romanovi 166
 rosina 162
 rosita 167
rufocincta 120
- saladillensis **120**, 121, 169
saltator 107
 sarvistana 166
satura 134
saturata 134
 saundersi 167
 saxatilis 166
schaeferi 120
 scotosia 166
 sejona 116, **118**, 169
 selene 131, **151**, 170
selenis 86
selenoides 128
 seminole **100**, 168
 sepulta 110, **115**, 169
 serpia **127**, 169
 sestia 130, **134**, 169
 shandura 166
 sibina 166
 signata 110, **112**, 169
 similis 122, **123**, 169
 simois **93**, 168
 sindura 166
 sitalces 95, **107**, 168
 sodalis **161**, 167
 sopolis 93, **103**, 168
 sosis 95, **106**, 168
stenotaenia 104
stesilea 96
 sticta 130, **140**, 170
 styx Staudinger 163
 subfasciata 138
 subconcolor **101**, 168
 subota **98**, 168
sulphurata 134
 sutschana 166
sydra 102
- taeniata 95, **106**, 168
 tangigharuensis 166
taphius 114
 Tegosa 83, 84, **121**, 169
 Telenassa 82, 84, **110**, 168

teletusa 110, **111**, 168
texana 94, 95, **100**, 168
Texola 167
tharos **85**, 167
tharossa 86
thebais **89**, 168
theona 167
Thessalia 167
thymetus 123
Tisona 84, **120**, 169
tissa **127**, 128
tissoides **125**, 169
transcaucasica 166
trimaculata 110, **114**, 169
tristis 87
trivia 166
tulcis 95, **105**, 168
turkmanica 166

ursula 122, **124**, 169

vanessoides 161
varia 165
variegata 93, **94**, 168
velica 116, **118**, 169
verena **97**, 168
vesta 85, **92**, 168
vestalis 92
veternosa 134
virilis 152

weneri 150

yuenty 166

zamora 116, **119**, 169